PARENTAL INVOLVEMENT PREDICTORS OF ACADEMIC SUCCESS: A REVIEW OF THE NCES 2007 PARENT AND FAMILY INVOLVEMENT IN EDUCATION SURVEY

by

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ABSTRACT

Public education is one of the most valued institutions in the United States of America. In the last half century parents' role in the educational process has gained interest and national focus from policymakers, educators, and researchers (Hawes & Plourde, 2005). Of concern and an area where the least amount of research has been conducted is parental involvement with high school students (Epstein & Sheldon, 2002). Parent involvement in education research has primarily been focused on elementary grade levels (Chen & Gregory, 2009) and shown positive correlations to improved achievement (Anderson & Minke, 2007; Catsambis, 2005; DePlanty, Coulter-Kern, & Duchane, 2007; Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Henderson, 1987; Henderson, Jacob, Kernan-Schloss, & Raimondo, 2004). Using Bronfenbrenner's (2005) bioecological model of human development, the purpose of this study was to determine the extent to which the macrosystem, microsystem, and exosystem variables predicted overall grades in the NCES 2007- Parent and Family Involvement in Education Survey. Hierarchical regression analysis indicated each of the variables was predictive of overall grades. This study provides information about predictors of parent involvement practices and school communication, which can further add to the research base and have impact for policy makers, schools, and families working to achieve maximum growth of academic achievement for all students.

CHAPTER 1

INTRODUCTION

"The evidence is now beyond dispute: parent involvement improves student achievement. When parents are involved, children do better in school, and they go to better schools." (p. 1)

Henderson (1987)

Parent involvement in education research has primarily been focused on elementary grade levels and shown positive correlations to improved achievement (Chen & Gregory, 2009). Of concern and an area where the least amount of research has been conducted is parental involvement with high school students (Epstein & Sheldon, 2002). Parental involvement in a child's education has been shown to increase academic achievement (Anderson & Minke, 2007; DePlanty, Coulter-Kern, & Duchane, 2007; Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Henderson, 1987; Henderson, Jacob, Kernan-Schloss, & Raimondo, 2004). Research also indicates positive student attitudes and behavior (Jeynes, 2007), increased school attendance and a higher sense of positive self-feelings from students (Berger, 2008; Fan & Chen, 2001) whose parents are involved in their education. Some researchers have claimed the missing link to high levels of achievement is parental involvement (Colombo, 2006).

Public education is one of the most valued institutions in the United States of America. In the last half century parents' role in the educational process has gained interest and national focus from policymakers, educators, and researchers (Hawes & Plourde, 2005). The US has been criticized for poor performance of high school students on standardized tests coupled with high dropout rates. One area that must be addressed is the role that parents play in the education

of their children and the support they provide in the educational process. While there are many parents who are involved in their children's education there are also those who take a hands off approach, believing that it is the sole responsibility of the school to educate their child.

Parent involvement decreases as a child enters middle school and into high school (Hill & Tyson, 2009). The question debated is often what type of parent involvement at the high school level results in higher academic gains for the student (Epstein, 2001; Henderson & Mapp, 2002). Differences exist in the body of knowledge around parent involvement to suggest that parent involvement practices look different at various levels in the educational system. In order to explore the role of parent involvement practices at the high school level and interpret different strategies parents use to support their child a representative sample that can be dissected must be used. Inherent to this research is also the patterns of involvement that occur as a result of the relationships between schools, parents, and the community. Educational achievement at any level is impacted by not only teachers and school practices, but by the larger environmental processes that take place for the child. In order to predict and understand the impact of parent involvement practices for high school students it is imperative to use a theoretical framework that detects these influences from school and the home and allows for the observation of these influences (Bronfenbrenner, 2005). To accomplish this goal a theoretical perspective that takes into account differing contexts of relationships must be employed.

The research presented explored a bioecological perspective to analyze data from the National Center for Education Statistics (NCES) - 2007 Parent and Family Involvement in Education survey in order to better understand the types of parent involvement that best predict academic success for high school students.

Statement of the Problem

A concern that was addressed is the fact that as students reach secondary schools parent involvement decreases (DePlanty et al., 2007; Hill & Tyson, 2009; Stevenson & Baker, 1987). Research on parent involvement in secondary schools is lacking the breadth needed to make contributions to the field of study (Chen & Gregory, 2009; Griffin, 2010; Hill & Tyson, 2009). Creswell (2009) explains this as a deficiency in the research base because of the lack of representation from one population. This study examined parent involvement at the secondary level. Of major concern is what types of parental involvement can be predicted to increase the academic success of the student? What types of parent involvement contribute to higher grades and achievement of students in secondary schools?

Purpose

The purpose of this study was to gain an understanding of the types of parental involvement predictors that influence academic achievement at the high school level by examining the National Center for Education Statistics (NCES) 2007 Parent and Family Involvement in Education Survey. Demographic information for all respondents was examined to better understand parent involvement practices by parents/guardians and schools. Understanding the factors that influence parent involvement in the educational process at the secondary level will inform strategies that may potentially increase academic achievement for all students. Identifying parental involvement practices that predict higher levels of academic success will contribute to the body of knowledge needed to influence public policy, educational programs, and educational stakeholders while positively impacting the learning process for all students.

Research Questions

The following research questions were used to explore parent involvement predictors of success for high school students.

1. What are the demographic characteristics of high school parents who participated in the NCES 2007 Parent and Family Involvement in Education Survey?
2. Is there a statistically significant difference between rural and non-rural high school parents for a) active parent involvement in the school, b) attending a meeting in the school, c) homework rules for parent involvement in the home, d) education expectations for parent involvement in the home, e) general school communication home, and f) personal school communication home?
3. Is there a statistically significant difference between male high school students and female high school students for a) active parent involvement in the school, b) attending a meeting in the school, c) homework rules for parent involvement in the home, d) education expectations for parent involvement in the home, e) general school communication home, and f) personal school communication home?
4. To what extent do parent demographics, parent involvement in the school, parent involvement in the home, and school communication home predict academic grades of high school students (9th-12th grade)?

Theoretical Framework

This study will employed the use of Bronfenbrenner's (2005) bioecological theory of human development. Urie Bronfenbrenner was a pioneer in human development and believed that the development of all humans was a complex relationship of biological factors and environmental factors that influenced the development of the human being. Bronfenbrenner's

bioecological perspective enabled the research of parent involvement in high school to be viewed from specific relationships at school and in the home while examining how these spheres of influence predicted academic achievement.

Bronfenbrenner is quoted in an article published in 1977 titled Toward an Experimental Ecology of Human Development where he said:

> ……the understanding of human development demands going beyond the direct observation of behavior on the part of one or two persons in the same place; it requires examination of multiperson systems of interaction not limited to a single setting and must take into account aspects of the environment beyond the immediate situation containing the subject (p. 514).

It is important to note the use of the bioecological theory in this study that utilizes the most recent version of Bronfenbrenner's work. The bioecological theory consists of the Process-Person-Context-Time model that evolved later in the career of Bronfenbrenner. This perspective has five interrelated components in the "Context" model that contribute to the development of the student (Bronfenbrenner, 2005). Each of these systems is present and influences the development of high school students and the involvement of parents in their education. Bronfenbrenner (2005) describes these components of development as the microsystem, mesosystem, exosystem, macrosystem, and the chronosystem. These "evolving" systems influence one another to form the definition of the bioecological theory that Bronfenbrenner (2005) defined as:

> the scientific study of the progressive, mutual accommodation, throughout the life course, between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by the relations

> between these settings, and by the larger contexts in which the settings are embedded. (p. 107)

The bioecological theory was formed through Bronfenbrenner's work with Kurt Lewin's equation for behavior, $B = f(P, E)$, which characterized behavior as a joint function between the person and the environment. Bronfenbrenner believed that the time over the course of life impacted development and not just behavior. For this reason Bronfenbrenner proposed tweaking the formula to accommodate the changes occurring during the life span and the fact that research on any development of the organism is attributed to the exact time the research is conducted thus requiring the formula to represent $D = f(P, E)$, or development equals the joint function of the person and the environment.

The bioecological framework was used to investigate parent involvement practices of high school students in the school and at home with analysis to predict academic achievement. With this information, policy makers, educators, researchers, and parents might be better equipped to propose programs that increase levels of academic achievement for secondary level students.

Microsystem. The evolution of the ecological theory into the bioecological framework by Bronfenbrenner (2005) has evolved into the current definition of the microsystem:

> a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical and material features and containing other persons with distinctive characteristics of temperament, personality, and systems belief. (p. 148)

Bronfenbrenner (2005) defines the microsystem to include structures and processes taking place in an immediate setting containing the developing student. For the purpose of this

study, the microsystem included home and school based parent involvement activities that influenced or predicted academic achievement.

Mesosystem. The mesosystem is a system of microsystems taking place between two or more settings that contain the developing person (Bronfenbrenner, 2005). The microsystems involved affect each other to create the processes of the mesosystem. In this study the mesosystem included the relationships formed and interaction between the school and home with regards to parent involvement practices and encouragement. Vital to this investigation is the communication process between home and school that influences parent involvement practices at the high school level.

Exosystem. Bronfenbrenner (2005) describes the exosystem as: the linkages and processes taking place between two or more settings, at least one of which does not ordinarily contain the developing person, but in which events occur that influence processes within the immediate setting that does contain that person. This framework is aligned well to parent involvement of high school students in order to investigate the relationship between predictors such as school communication home to parents, dynamics of a family's workplace requirements or the relationship of neighborhood influences. An example of exosystem influence on the achievement of a student may be the long hours required of a parent at their place of employment which in turn significantly reduces the amount of time the parent has available to help a child with homework. While children are not directly present at their parents' place of work, they may still be impacted by the work environment. This study examined the exosystem influence of communication home from the teacher or school and the predictive value on academic achievement.

Macrosystem. The macrosystem is defined as the interconnectedness of the microsystem, mesosystem, and exosystem in the ideology and organization of the social institutions in a society or subculture (Bronfenbrenner, 2005). This definition takes into account the profound impact a culture, subculture, or other societal structure has on the development of the individual. Of importance to Bronfenbrenner 's bioecological perspective is that research findings will likely change based on the macrosystem differences in resources, belief systems, and opportunity structures of the group.

In the investigation of parent involvement of high school students a framework was needed to research how different social classes, ethnicity, gender and region of residence contributed to high school parent involvement and academic achievement.

Chronosystem. As described in Bronfenbrenner (2005) the chronosystem is the phenomenon that extends over the life course of the person or the group. Chronosystem changes over time may relate to individual personal changes that occur or societal changes that take place during the life course of the individual. These chronosystem changes impact each of the previously mentioned systems in the bioecological framework.

Examples of chronosystem impacts in the external environment may be the birth of a sibling, entering school, divorce, or a death in the family (Bronfenbrenner, 2005). Another type of chronosystem impact on development may be more personal in nature, like puberty or severe illness (Bronfenbrenner, 2005). The chronosystem seeks to examine the developmental changes that are triggered by life events and experiences. Due to the cross sectional design of this study the chronosystem was not examined as it relates to parent involvement practices of high school students and the predictive value to academic achievement.

Significance of the Study

Identifying parental involvement practices that predict higher levels of academic success for high school students will contribute to the body of knowledge needed to influence public policy, educational programs, and educational stakeholders who aim to positively impact the learning process for all secondary students. The lack of exclusive research to secondary students limits the progress and impact schools and parents have as they collaborate for higher academic achievement.

Bronfenbrenner (2005) believed public policy was as important to human development research as human development research was to public policy. The study of parent involvement factors that influence academic achievement for secondary students is needed in order to better inform initiatives aimed at improving academic achievement in high schools. As initiatives form around the subject of parent involvement in secondary schools it is important to have a knowledge base suitable for the task. Many of the programs aimed to improve parent involvement at the secondary level are based on successful parent involvement strategies in elementary schools. Current research cites different variables and factors that need to be examined for parent involvement in elementary verses secondary schools (Hill & Tyson, 2009).

Definitions of Key Terms and Acronyms

The following descriptions form a consistent understanding of the key terms and acronyms used in this research study.

Academic socialization- includes parenting practices that help students with setting goals, talking about career aspirations, modeling the importance of an education, help in selecting courses, knowing names of teachers and classmates, discussing report cards and progress, and setting academic expectations (Hill et al., 2009).

Communication home to parents- this is any communication initiated by the school and directed home to parents or guardians.

NCES- National Center for Education Statistics

Parent Involvement- is described as the interactions of parents at home and school to promote academic achievement of the child to include meaningful and ongoing two-way communication between home and school about academics and other school activities (Hill et al., 2009).

Parent Involvement at Home- includes checking on homework, requiring a child to do homework, homework help, going to museums/exhibitions/library, encouragement of reading, and talking to students about current events (Hill et al., 2009).

Parent Involvement at School- includes parents attending conferences, volunteering at school, attending open houses, going on field trips, helping out at school (Hill et al., 2009).

Summary

The purpose of this study was to provide a deeper understanding of the parent involvement strategies that predict higher academic achievement for high school students. As students enter high school the level of interaction and involvement of parents decreases. While adolescents strive for autonomy and acceptance as young adults, high schools must find avenues that engage parents in order to gain support for student success. By examining the predictors of high school parent involvement practices policy makers, educators, and reform initiators will better understand the variables that must be addressed.

Chapter 2 provides a summary of the research currently available on parent involvement in the education of students. This research base examines the relationship of parent involvement practices, programs, and outcomes in the school and in the home.

Chapter 3 describes the quantitative methodology used in the present study. Theoretical framework, variables, respondent demographics, data analysis, delimitations and limitations will be presented as they relate to the NCES 2007 Parent and Family Involvement in Education Survey.

Chapter 4 provides details and examination of analyses used to inform this study. A review of the research design, methodological approach, independent variables and the dependent variable are explained along with the creation of constructs through factor analysis. A review of descriptive statistics, correlations for each of the independent and dependent variables, and results of the regression analyses are also presented in detail. The chapter concludes with answers to each of the four research questions examined in this study.

Chapter 5 reviews the research and includes discussion and conclusions informed by the results from chapter 4 as they pertain to the macrosystem, microsystem, and exosystem hypothesized to predict overall grades for high school students. Discussion is provided on implications for policy and practice on each of the macrosystems, microsystems, and exosystems examined in the study. The chapter closes with final thoughts.

CHAPTER 2

LITERATURE REVIEW

"All parents want to help their children grow and achieve success."

Epstein (2001)

Historical Perspective

It wasn't so long ago that a child's education was seen as the responsibility of the parents (Hiatt, 1994). Parent involvement has existed in education from the beginning of time. Before formal schools were created parents were responsible for the education of their child. The lessons taught by parents could be characterized as basic survival skills to ensure safety and existence (Dodd & Konzal, 1999). In the early years of the American colonies parents were directly involved in the education of their children through lessons in basic religion, reading, and writing (Dodd & Konzal, 1999; Hiatt, 1994). Early colonial parents also served as lay citizens on the school governance board and helped provide direction to local schools and teachers about what should be taught and how. As societies progressed schools were organized to teach the skills and objectives that were agreed upon by the community and policy makers. This coordination created close relationships between the organized school and parents to ensure students obtained the skills and teachings that all stakeholders believed to be important.

Hiatt (1994) notes that, over the years, parent involvement and social class created a divide in the opportunities for children and schools. Upper social class parents created schools that catered to their social demands while lower class citizens lacked the resources necessary to educate their children. As public education in the United States developed, parent involvement in the educational institution was lost (Hiatt, 1994). The once dominant parental involvement

practices that drove educational policy had now been lost to school boards with competing interests and agendas from business and industry associations.

As the 20th century progressed educational institutions focused on regimented curriculum that sought to turn out production workers to fuel the industrial revolution. The teaching and learning that took place in the American school system evolved into a very segregated operation that divided home and school (Bowles & Gintis, 2000; Lowe, 2000; Rogoff, 2003). Schools produced workers for the factory and parents stayed out of the way (Cooper & Denner, 1998).

In the 1940's mothers recognized their isolation from the school system and created the Parent/Teacher Association (PTA). This organization helped encourage parents to get involved in the education of their children (Hiatt, 1994). During the middle of the twentieth century policy makers and industry leaders joined together to issue calls from the home front for the need of parents to be more involved in the educational process. In 1965, educational reform, under the direction of Title I, encouraged schools to form partnerships with parents in the hope of strengthening the academic gains of students (Seginer, 2006). Parents were now looked upon to offer guidance and support of the school in the learning process.

Research by Urie Bronfenbrenner (1979, 1988, 1992, 2005) established the need, early in a child's life, for parent involvement. Bronfenbrenner's research on child development led to his appointment to a federal committee that helped form and establish the Head Start program in the United States. Bronfenbrenner was one of three developmental psychologists on the panel and urged each to include parents and the community in the initiative to better equip low income students for school.

This new outlook on parental involvement caused some teachers and even parents despair. Many teachers who were used to operating in isolation from the home rejected the idea

that parent involvement was needed or acceptable (Prescott, Pelton, & Dornbusch, 1986). Parents' view of parent involvement ranged from wanting to participate in the education of their child (Epstein, 1995) to not wanting to be involved at all, believing it was the role of the teacher to provide academic gains for their child (Crozier, 1999).

Defining Parent Involvement

The research base for a definition of parent involvement has not been operationalized consistently across studies. A common definition of parent involvement is difficult at best due to the multifaceted behavior of parents (Fan & Chen, 2001; Feuerstein, 2000). Research on this issue proves that parent involvement is defined in different ways (Stevenson & Baker, 1987). Parents often view involvement as making sure their child is well cared for or making sure children go to school, while teachers may view parent involvement as having parents attend school related activities (Anderson & Minke, 2007).

Parent involvement has been described and researched through various types of parent practices (Fan, 2001). These differences in interpretations of parent involvement have created a vast amount of research about parent involvement, but have also provided inconsistent results due to the different operational definitions used and implemented in research designs. Fan (2001) notes that although research is progressing about parent involvement and positive academic achievement, researchers must still work to understand which parent involvement practices yield the most academic achievement.

In their meta-analysis, Hill and Tyson (2009) claim that parent involvement is most widely described as the interactions of parents at home and school to promote academic achievement of the child to include meaningful and ongoing two-way communication between home and school about academics and other school activities. Grolnick, Benjet, Kurowski, and

Apostoleris (1997) explain parent involvement as parents providing resources to students when support is needed. Parent involvement most often revolves around parent practices to support their child at school and parent involvement activities that are carried out at home (Christenson and Sheridan, 2001; Seginer, 2006). Through prominent research and theorizing Jeynes (2007) defines parent involvement as parental participation in the educational processes and experiences of the child.

Theoretical Frameworks

Research about parent involvement has produced very few theoretical frameworks that have helped align and compare practices of parents that may influence academic achievement of their child (Fan, 2001). Two frameworks that have emerged in parent involvement research are: Epstein's parent involvement model and the Hoover-Dempsey and Sandler framework. Each represents a conceptual model to follow while conducting parent involvement research.

Epstein (1990) created a parent involvement model that focused on different types of involvement. Epstein's (1990) model was focused on: (a) basic obligations, (b) school-to-home communications, (c) parent involvement at school, and (d) parent involvement in learning activities at home. Epstein (1995) later reworked these types of parent involvement practices to focus on what schools could do to initiate involvement from parents: (a) child rearing assistance (b) school-home communication (c) volunteer opportunities for parents (d) learning at home with parents (e) school decision making with parent input and (f) school and community collaboration. While Epstein considers this a theoretical framework for research, Hoover-Dempsey and Sandler (1995) critique it as an initiative utilized by schools to involve parents in the education of their children.

The Hoover-Dempsey & Sandler Model of Parental Involvement

Level 5

Student Achievement

↑

Level 4

Student Attributes Conducive to Achievement			
Academic Self-Efficacy	Intrinsic Motivation to Learn	Self-Regulatory Strategy Use	Social Self-Efficacy Teachers

↑

Level 3

Mediated by Child Perception of Parent Mechanisms			
Encouragement	Modeling	Reinforcement	Instruction

↑

Level 2

Parent Mechanisms of Involvement			
Encouragement	Modeling	Reinforcement	Instruction

Parent Involvement Forms			
Values, Goals, etc.	Home Improvement	School Communication	School Involvement

↑

Level 1

Personal Motivation		Invitations			Life Context	
Parental Role Protection	Parental Efficacy	General School Invitations	Specific School Invitations	Specific Child Invitations	Knowledge and Skills	Time and Energy

Figure 1.1 Hoover-Dempsey & Sandler 2005 Model for Parent Involvement

The Hoover-Dempsey and Sandler (2005) framework consists of five levels of involvement that examine parent involvement. Figure 1.1 depicts a visual of the Hoover-Dempsey and Sandler model of parent involvement. This theoretical model evaluates parent involvement from a psychological perspective to determine specific indicators of parent behavior (Deslandes and Bertrand, 2005; Green, Walker, Hoover-Dempsey, & Sandler, 2007). The Hoover-Dempsey and Sandler model focuses on understanding why parents get involved in their child's education rather than identifying associations between parent involvement practices and

student academic achievement (Walker, 2010). The model consists of: (a) why parents become involved (b) how parents choose the type of involvement (c) child perception of parent mechanisms (d) student attributes conducive to achievement and (e) why the specific type of involvement has a positive impact on student achievement (Hoover-Dempsey & Sandler, 2005).

An alternate theoretical framework that has been utilized minimally in parent involvement research is the ecological and bioecological theory developed and refined by Urie Bronfenbrenner. The bioecological theory takes into account the relationship of interactions that result in parent involvement practices. Parent involvement research has examined many types of involvement, but lacks a theoretical framework that take into account the multifaceted construct that needs to be examined (Fan & Chen, 2001). A framework such as the bioecological theory examines these variables as multiple levels of influence in learning where parent involvement at school and home exert unique variables when combined (Bronfenbrenner, 2005). Parent involvement at school and at home are described by Epstein et al. (2002) as separate locations with overlapping spheres of influence on the child. Seginar (2006) used the ecological theory to find positive results for home and school parent involvement on academic gains of students, but also generated further research questions that needed to be addressed. The need to examine parents' networks and workplace, neighborhoods and educational policy were questioned with regard to the influence they may have on parents' involvement in their child's education (Seginar, 2006).

Bronfenbrenner's ecological theory work (1977, 1979, 1988, 1992) established his view of the importance of parent involvement and the need of Head Start programs to involve parents and the community directly in the education of the child. Bronfenbrenner believed that research should emphasize the interconnectedness of the relationships of human development and how

these relationships affect each other in a bidirectional manner (Bronfenbrenner, 1979). This was the original framework and still holds true in the bioecological framework of the 1990's process-person-context-time model that was created towards the end of his career. The bioecological framework has been used minimally in parent involvement research, but one such study by Benner, Graham, and Mistry (2008) positively correlated proximal processes and their effect on microsystems within the school, community, and the home.

Parent Involvement and Academic Achievement

Parental involvement in education is generally regarded as an important aspect for the positive growth of students (DePlanty, Coulter-Kern, & Duchane, 2007; Anderson & Minke, 2007; Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Epstein & Sheldon, 2002). The research behind parental involvement and its correlation to positive academic achievement is noteworthy (Stevenson & Baker, 1987; Wachs, 2000). The significant role of families, family-school relations, and parental involvement in the education of a child has a positive impact on student achievement (Fan & Chen, 2001). Students whose parents are involved in their education experience higher grades (Stevenson & Baker, 1987) and grade point averages (Anderson & Minke, 2007), have higher attendance rates (Epstein & Sheldon, 2002), and fewer discipline problems (Deslandes & Royer, 1997). Research has established the positive benefits of numerous types of parent practices to academic and social competencies (Chen & Gregory, 2009).

Parental involvement has received increased attention from the federal government, state education departments, and local school boards in recent decades (DePlanty, Coulter-Kern, & Duchane, 2007). Federal policies such as the No Child Left Behind Act of 2001 point to the need for schools and parents to work together towards higher academic achievement. The need

to provide empirical research on parental involvement in education has seen greater demand and thus has produced additional scholarly knowledge for government agencies, educators, and researchers.

What is lacking in parent involvement research is an extensive background in high school parent involvement practices that impact student achievement (Hill & Tyson, 2009). As students' progress through school parent involvement decreases (Epstein, 1990; Stevenson & Baker, 1987; Hill & Tyson, 2009) as students work to create autonomy from parents (Fan, 2001). Middle school and high school students' work towards independence while parents often feel increased anxiety due to more teachers, bigger schools, and the bureaucratic nature of the educational system. The same parent involvement practices that correlated to student achievement in elementary now seem unrealistic for some parents as they feel unable to help with more difficult school subjects and rely more on motivational prompting (Dauber & Epstein, 1993).

Microsystems for Parental Involvement

Bronfenbrenner (2005) describes the microsystem as the immediate settings that contain the developing person. The microsystems for parent involvement would occur at school and at home to include any action by the parent to support the education of the child. It is generally accepted that parental involvement can include many different actions and behaviors while supporting the education of a child (Fan & Chen, 2001). What is common in research findings is that these behaviors can be characterized by parental involvement occurring at school and parental involvement occurring at home (Hill & Tyson, 2009; Seginar, 2006). Deslandes and Bertrand (2005) provide research to support the need to examine parent involvement in the school and in the home separately due to the variance in generalized findings. Included within

home involvement practices are actions of parents to supervise school work and actions of parents that include more motivational factors such as discussions about achievement expectations, the value of an education, planning for post-secondary education, or making connections of current classroom learning to areas in the parents' life.

Parental Involvement in the School

School based parent involvement has produced positive results for students that may include any action of parents to support the school or their child while at the school (Seginar, 2006). Positive research findings include: parents attending conferences, volunteering at school, attending open houses, going on field trips, and helping out at school (Desimone, 1999; Keith, 1993; Steinberg, Lamborn, Dornbusch & Darling, 1992; Hill et al., 2009). Research in school based parent involvement has shown positive results for the academic achievement of students (Jeynes, 2010; Hill et al., 2009; Henderson & Mapp, 2002).

In the meta-analysis conducted by Seginer (2006) the research suggests that parental involvement in elementary grades are often educationally directed while parent involvement in middle and high school translates most often to participation in school meetings and activity attendance. Research to explain these findings suggest that communication levels between teachers and home are more frequent when a child is in elementary school (Epstein, 1990, 2001; Van Voorhis, 2003). This increased communication between the teacher and the parent reduced absenteeism and behavior problems (Epstein & Sheldon, 2002). The communication facilitated a positive relationship that Bronfenbrenner (1979) claimed was essential for the developing student and had to be based on mutual respect and trust. One factor that may influence the decreased communication at the secondary level may be the low levels of communication that exist on a consistent basis with middle and high school parents (Muller, 1998).

Communication between the parent and teacher also informs parents of the content being taught and expectations of the classroom. At the elementary level parents feel more confident with the content and their ability to help their child at home. The communication by teachers with parents who are involved in school activities has also shown positive results for diagnosing problems with the child and finding solutions quicker than noninvolved parents (Grolnick & Slowiaczek, 1994).

Parental Involvement in the Home

Parental involvement in the home takes on many meanings to both parents and educators. For some parents, involvement in the home is more supervisory with rules about doing homework at a certain time, checking to make sure homework is done, limiting television viewing, or knowing where a child is after school. Still, other parents seek learning opportunities outside of school by visiting museums or creating educational type projects at home with the child. Some parents support the education of their child in the home via communication about educational goals, values, and the need to go on to college or technical training. Home based activities include: checking on homework, requiring a child to do homework, homework help, going to museums/exhibitions/library, encouragement of reading, and talking to students about current events (Hill & Tyson, 2009).

A third type of parent involvement, academic socialization, is gaining momentum with recent research to indicate that it has the greatest effect when correlated to academic achievement (Hill & Tyson, 2009). Academic socialization, also described as parent/child discussions about educational topics, has produced favorable results by scholars towards academic achievement (Epstein & Sheldon, 2002; Sheldon, 2005). This type of parental involvement includes: parenting practices at home, setting goals, talking about career aspirations, modeling the

importance of an education, help in selecting courses, knowing names of teachers and classmates, discussing report cards and progress, and setting academic expectations (Hill & Tyson, 2009). Zellman & Waterman (1998) find that parent involvement programs initiated by schools may not be increasing academic achievement as much as was intended and suggest further development of academic socialization initiatives.

Exosystems for Parental Involvement

Exosystems as described by Bronfenbrenner (2005) can include many forms, one of which may entail communication between two settings in the developing person's life. School communication home is an exosystem influence for every student. The student may not be directly involved in the communication medium, but they most likely will be influenced by the events of that communication at school or at home.

School Communication Home.

The exosystem sphere of influence, school communication home, which aligns to Bronfenbrenner (2005) and his theory of bioecological development was examined in order to explore how this might impact parental involvement and academic achievement. Bronfenbrenner (2005) described the exosystem as contexts influencing the developing person, but not directly involving them. This description can describe the sphere of influence that exists when the school or a teacher communicates with parents or guardians about the child. The child is not directly present or interacting with the teacher or parent/guardian when this communication takes place, but is directly involved by the information communicated. Examples may include phone calls, written notes, emails, or newsletters about accomplishments, concerns, or general information correspondence.

Macrosystems for Parental Involvement

> Bronfenbrenner (2005) expanded his original description of the macrosystem to include: the overarching pattern of micro-, meso-, and exosystems characteristic of a given culture, subculture, or other extended social structure, with particular reference to the developmentally instigative belief systems, resources, hazards, lifestyles, opportunity structures, life course options and patterns of social interchange that are embedded in such overarching systems (p. 101).

Investigation of the NCES- 2007 Parent and Family Involvement in Education survey examined possible macrosystems to determine parent involvement predictors of overall grades.

Grade Levels Examined

Parent involvement in school activities takes different forms largely in response to the age level of the student (Seginer, 2006). Parent involvement in lower elementary can be described as parents coming into the classroom to help, chaperoning field trips, baking cookies for fundraisers, and working on basic skills at home with their child. School based interaction at the elementary level may also include visits to the classroom and volunteering at school activities and events. This might be described as help with school activities. Many other types of parent involvement could be listed here, but the main research findings provide outcomes that characterize parents helping their child in a vast array of strategies to promote academic achievement. A majority of research is centered on lower elementary students and contexts (Hill & Tyson, 2009). This research is useful when trying to correlate findings for grades close in proximity, but may not be generalized to upper grade levels such as high school.

As students get older school based involvement evolves to contact from the school and attendance at school functions (Seginar, 2006). Parents sometimes feel unable to help with more

challenging academic work or provide opportunities to increase the academic achievement of their adolescent (Dauber & Epstein, 1993).

Most research in school based activities is characterized by the search for data that explains what dimensions or strategies have correlational value to academic achievement (Fan, 2001; Hawes & Plourde, 2005; Stevenson & Baker, 1987; Driessen, Smit, & Sleegers, 2005).

Gender

Parent involvement related to gender has produced conflicting results. Grolnick, Benjet, Kurowski, and Apostoleris (1997) discovered that parents of females offer more support at home and school than males. Increased parent involvement for females is explained by Chase-Lansdale, Michael, and Desai (1991) as a belief of parents that daughters are more vulnerable than sons and require more attention and responsiveness. Females have also been shown to be more connected to their teachers and provide more communication home to parents about what learning is taking place at school (Grolnick, Benjet, Kurowski, and Apostoleris, 1997) thus improving parent involvement. Contrasting research done by Stevenson and Baker (1987) suggests that parent involvement for males was higher than females based on school involvement. Research conducted by Mo and Singh (2008) finds that female students achieve at higher levels, but that no significant difference is apparent for their engagement in school or their parents' involvement.

Ethnicity

Research findings pertaining to parent involvement and race have produced favorable results overall (Desimone, 1999; Dornbusch, Ritter, Leiderman, Roberts & Fraleigh, 1987; Fan and Chen, 2001; Steinberg et al., 1992). Ethnicity directly impacts parent involvement actions based on cultural factors and behavior (Hill & Taylor, 2004). The research finding for parent

involvement within ethnicity demographics has been criticized due to criteria based on white middle class values (Hornby & Lafaele, 2011). This parent involvement barrier for ethnic diversities may be responsible for the variance in findings that relate directly to macrosystem variables that need to be explored in connection to high school students.

Community Type

Community type regarding parent involvement can be viewed as rural and non-rural living situations. Research done by Keith, Keith, Quirk, Cohen-Rosenthal, and Franzese (1996) found that parents of children attending rural schools are no more involved, and no less involved than students attending urban or suburban schools. They also determined that parent involvement has the same effect on the academic achievement of rural students as it does for urban and suburban students.

Region of Residence

The research base for parent involvement and region of residence produces no empirical outcomes for scholarly knowledge. This study will examine region of residence as a predictor of academic achievement. Demographic characteristics, such as region of residence, for parent involvement may provide data to support further investigation of parent practices.

Household Income

Research correlating social economic status (SES) and parent involvement in academic achievement has produced favorable research to support their positive relationship (Fan, 2001). Ethnicity and parent involvement has produced some research outcomes claiming a positive correlation to academic achievement, but more importantly points out that different culture and ethnic groups exhibit parent support in different ways (NCES, 1994).

Socioeconomic status has been researched with varying results in parent involvement (Fan & Chen, 2001). Research has supported the notion that families with fewer resources often get involved in the education of their child in different forms than do parents with greater resources (Anderson & Minke, 2007).

Over Involved Parents

A very limited research base has gained interest for parents who are perceived by educators to be too involved in the education of their child. These parents have been labeled "helicopter parents" for their overprotective and overly involved practices that is described as hovering over their child and pouncing down in times of turmoil (Pricer, 2008) or "snowplow parents" for their intent to clear the path of all obstacles (Malley-Morrison, 2009). Another label used is "lawnmower parenting" in which parents attempt to go ahead of the student and smooth out all of the rough spots and mow down all obstacles for the child (Locke, Campbell, and Kavanaugh, 2012). The concern and interest in this type of parenting is the long term effects of such practices on the child where little research has been conducted (Ungar, 2009).

Barriers

Parent involvement in a child's education experiences many barriers in the interaction needed to promote higher levels of academic achievement. Coupled with growing social pressures, increased academic demands, and an overall determination to be treated like adults, adolescents may experience turmoil when parents get involved (Chen & Gregory, 2009). While many educators are quick to blame a lack of parental involvement for low attainment, it is important to examine the barriers parents encounter as they try to support their child (Ramirez, 1997).

Research on barriers to parental involvement cite a multitude of reasons why parents either choose not to be involved or are unable to participate in the learning of their child (Anderson & Minke, 2007; Desimone, 1999; Gutman & Eccles, 1999; Garcia-Coll et al., 2002). These barriers can be characterized as home and school based. School based barriers may include negative perceptions of parents by teachers, poor school district parent involvement plans, poor communication methods by the school, and work conflicts with times that parent meetings and events are scheduled.

Of particular note is research done by Ramirez (1997) about the perceptions of teachers towards parent involvement. In this research study teachers did not have a strong indication or desire to involve parents in the educational process. While they viewed parent involvement as somewhat important to the education of their students they did not feel it was their responsibility to involve parents. Peressini (1998) researched teacher' perceptions of parent involvement and found that parents were often seen as obstacles. While this small sample may not be able to be generalized for all educators it may represent one variable that needs to be addressed on a larger scale.

Home based barriers include research on financial status, race, spoken language, cultural beliefs, style of parenting, parent efficacy, parent education, work schedule, and parents perceived invitation by the school. Ethnicity and parent involvement has produced both positive and negative results which calls for further examination of the macrosystem variables that influence behaviors to support educational progress for children (Desimone, 1999; Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Steinberg, Lamborn, Dornbusch, & Darling, 1992).

Prior to and during elementary grade levels parents are very involved in their child's education (Garcia-Coll et al., 2002). Some parents experience decreased participation when their child enters middle and high school. This is caused by multiple reasons like the feeling to build autonomy in the child (Eccles & Harold, 1993), increases in the number of teachers their child is taught by, and the sheer size of some middle and high schools as this can be intimidating to parents.

Parental role construction as described by Green et al., (2007) might also explain differences in levels of parent involvement. Green et al. (2007) claims that how parents perceive their role as a parent will predict levels of involvement. If a parent views their role as having responsibility for the education of their child they will be more involved at school and at home (Deslandes & Bertrand, 2005). Parental role construction may also evolve in time due to experiences with school personnel and their social groups (Hoover-Dempsey & Sandler, 1997).

For parents who believe that they are unable to help their child achieve better results academically, they are unlikely to get involved at school or at home (Green et al., 2007; Hoover-Dempsey & Sandler, 1997). Self-efficacy is defined as the perceived ability of the individual to act in a way that will produce a given result (Bandura, 1993). Barriers to parent involvement exist for parents with low self-efficacy construction. These parents may have experienced problems in their own schooling or have found that as their child has progressed through school the content is more complex and they are unable to feel confident in their abilities to give their child support. A positive belief by parents in their ability to help their child is a predictor of parent involvement practices at school and at home (Grolnick et al., 1997).

Self-efficacy can be influenced by the skills and knowledge of the individual parent and directly impacts their willingness to help students especially when it involves certain content

specific subjects (Hoover-Dempsey et al., 2005). If a parent believes their skill and knowledge level of math is high, they will be inclined to give the student support in this area, whereas if they believe they know very little about writing poems they may not feel qualified to give advice (Green et al., 2007). Research by Stevenson & Baker (1987) found that the higher the education level of the parents, especially the mother, the more involvement displayed by the parent. Deplanty et al., (2007) suggests that less educated parents shift their attention away from school due to their feelings of inadequacy to help their child academically.

Barriers presented for parent involvement as it relates to their time and energy are also available in the research base. Parents thinking about available time and energy are influenced by family responsibilities and often their careers. When extended family obligations or child care responsibilities are high for a parent they tend to exhibit lower parent involvement practices (Hoover-Dempsey et al., 2005). Just as family obligations influence parents, so does a demanding job with inflexible work hours. Parents in this situation usually have lower levels of involvement (Garcia-Coll et al., 2002).

Often parents do not feel connected to the school environment and need invitations to spur their involvement in the education process of the child. How parents perceive invitations from the school, the teacher, or their child has a direct impact on their willingness to get involved Green et al., 2007). Invitations by the school (Christenson, 2005), by teachers (Epstein, 1986), and the child (Deslandes & Bertrand, 2005) all show positive correlations to increased parent involvement when performed in a positive and genuine manner. Epstein (2001) found evidence to support that school related issues, such as a lack of communication between teachers and parents, influence parent involvement.

These findings present evidence that must not be quick to blame parents without understanding the reasons for non-involvement. Ethnographic factors such as limited English ability, communication from school in home language, and the need to work many hours prohibits some parents who want to be involved in the school process (Garcia-Coll et al., 2002). School practitioners must find ways to increase parent involvement for every ethnic group (Watkins, 1997).

Summary

The search for this literature review, involving parental involvement and academic achievement, required an extensive list of search terms, databases, and journals. All of the searches were conducted online through ERIC, EBSCO, AEA Online, and web-based search engines including Google and Google Scholar.

Search terms and phrases included: parent involvement in education, parent involvement, parent engagement, parent partnerships in education, bioecological, ecological, Bronfenbrenner, Urie Bronfenbrenner, parent school partnership, school parent initiatives, barriers to parent involvement in school, and overcoming educational barriers.

The search terms and phrases used where all searched with high school attached or specific subject search identifiers in data bases. All research was examined for the correlation between parent involvement and academic achievement.

Publish Dates

With the exception of Bronfenbrenner's theory related work, only research conducted between 1985 and 2013 were included in this parent involvement review. While many quality research studies exist before 1985, it was necessary to find relevant data that might prove a

reflection of our current status in society. Parental involvement practices have changed over time creating a need for research to also adapt and align to this evolving trend.

CHAPTER 3

METHODOLOGY

"Bioecological systems theory describes multiple levels of influence on development in which the home and the school exert both unique as well as combined forces on the growth of an individual."

Bronfenbrenner (2005)

The purpose of this study was to understand parent involvement behaviors that influence academic attainment of high school students through an analysis of the NCES- 2007 Parent and Family Involvement in Education Survey. Utilizing Bronfenbrenner's (2005) bioecological framework, this study examined parent involvement practices in the school, parent involvement practices in the home, school communication home, and parent characteristics of public high school students that influence levels of academic achievement. Having a better understanding of these factors will provide a better knowledge base for policy makers, educators, researchers, and parents as they strive to influence factors that will produce higher levels of academic achievement.

This chapter will describe philosophical assumptions as they relate to research questions, design, methodological approach, setting, population, sample, data collection and data analysis. This chapter ends with the limitations and delimitations of the study.

Research Design

This study used a quantitative methodological approach that is embedded in the postpositivist philosophical foundation. Creswell (2009) describes postpositivism as traditional forms of research most aligned to the scientific method or science research. Postpositivists seek to identify a problem and then assess the causes that influence outcomes (Creswell, 2009).

Methodological Approach

Survey research was used in this study to better inform and obtain factors that influence parent involvement in high school and predict higher academic achievement. The survey that was used is a secondary source from the Parent and Family Involvement in Education Survey administered by The National Household Education Surveys Program (NHES) in 2007 and developed by the National Center for Education Statistics (NCES). Access to the public-use data source was obtained through the National Center for Education Statistics where a cd containing all SPSS data files was provided upon request. This secondary data source was appropriate because of its representative sample in the United States and the correlation to parent involvement in the educational system. According to Hagedorn, Roth, O'Donnell, Smith, and Mulligan (2008) the 2007 Parent and Family Involvement in Education Survey in coordination with the National Center for Education Statistics addresses:

> Specific ways families are involved in their children's school, school practices to involve and support families, involvement with children's homework, and involvement in educational activities outside of school, highest school grades, teacher feedback, and factors affecting help with homework. The interviews also included questions about child, parent, and household characteristics. (p. 5-6)

Research Questions

The following research questions were used to explore the NCES 2007 Parent and Family Involvement in Education Survey to examine parent involvement predictors of success for high school students.

1. What are the demographic characteristics of high school parents who participated in the NCES 2007 Parent and Family Involvement in Education Survey?

2. Is there a statistically significant difference between rural and non-rural high school parents for a) active parent involvement in the school, b) attending a meeting in the school, c) homework rules for parent involvement in the home, d) education expectations for parent involvement in the home, e) general school communication home, and f) personal school communication home?
3. Is there a statistically significant difference between male high school students and female high school students for a) active parent involvement in the school, b) attending a meeting in the school, c) homework rules for parent involvement in the home, d) education expectations for parent involvement in the home, e) general school communication home, and f) personal school communication home?
4. To what extent do parent demographics, parent involvement in the school, parent involvement in the home, and school communication home predict academic grades of high school students (9th-12th grade)?

Research Setting

The NCES 2007 Parent and Family Involvement in Education Survey utilized a trained screener to collect information on the eligibility of the household composition and interview appropriateness. After a screening of eligibility, official phone interviews were conducted with households using a scripted survey for all participants. The average time of the interview for the NCES 2007 Parent and Family Involvement in Education Survey lasted 27 minutes.

Sample and Participants

The NCES 2007 Parent and Family Involvement in Education Survey contains data from interviews completed for 10,681 children enrolled in kindergarten through 12th grade. For the purposes of this study elementary and junior high students were excluded. Homeschool and

private school children were taken out of all data analysis as well resulting in a total population of 2971 students in grades 9-12 being represented. Respondents to the survey interview were a nationally representative sample of parents or guardians in the household who were the most knowledgeable about the child's care and education. A frequency distribution of participant demographic characteristics is reported in Table 3.1.

Table 3.1

Descriptive Statistics for Participant Demographics (n = 2,971)

Variables	*n*	% of sample
Grade Level		
9th	692	23.3
10th	755	25.4
11th	788	26.5
12th	736	24.8
Gender of Student		
Male	1511	50.9
Female	1460	49.1
Ethnicity of Child		
White, Non-Hispanic	1919	64.5
Black, Non-Hispanic	328	11.0
Hispanic	471	15.9
Asian or Pacific Islander	79	2.7
All Other Races	174	5.9
Community Type		
Rural	955	32.0
Non-Rural	2016	68.0
Census Region		
Northeast: CT, MA ,ME ,NH ,NJ , NY, PA, RI, VT	454	15.3
South: AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN,	1041	35.0
Midwest: IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI	725	24.4
West: AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY	751	25.3

Data Collection Methods:

The NCES 2007 Parent and Family Involvement in Education Survey incorporated random digit dial (RDD) telephone surveys of households in the United States by trained phone interviewers. The 2007 administration was conducted by Westat from January 2, through May 6,

2007. A screener was used to collect information on the eligibility of the household composition and interview appropriateness.

Survey Instrument

The survey used in this study was created by the National Center for Education Statistics (NCES). Questions were reviewed by experts in academic and research institutions as well as government agencies for clarity and usefulness of survey topics. A technical review panel and a survey staff examined questions by relevance to current research literature, professional journals, scholarly books, and government reports (National Center for Education Statistics, 2007). Questions used in the NCES 2007 Parent and Family Involvement in Education Survey are listed in Appendix A. NCES 2007 Parent and Family Involvement in Education Survey Instrument

Variables

Using Bronfenbrenner's (2005) bioecological framework to examine the secondary data source from the NCES- 2007 Parent and Family Involvement in Education Survey enabled this study to predict parent involvement strategies that influence academic achievement. Independent variables aligned to the theoretical structure of the study in the microsystem, macrosystem, and exosystem spheres and tested their potential prediction on academic achievement of high school students.

Independent Variables

Measurement of each of the independent variables including grade level, gender, ethnicity, census region, household income, parent involvement at school, parent involvement at home, and school communication home are described below.

Demographics. Demographic data was measured through participant responses on the NCES- 2007 Parent and Family Involvement in Education Survey. Grade level, gender of child, ethnicity, community type, census region, and household income are described below.

Grade Level. Grade level of student was measured by self-identification from the options: 9th grade (coded = 9), 10th grade (coded = 10), 11th grade (coded = 11), and 12th grade (coded = 12).

Gender of Child. Gender of child was measured by participants selecting male (coded = 1) and female (coded = 2).

Ethnicity. Ethnicity of the child was measured by self-identification from the following options: White (coded = 1), Black (coded = 2), Hispanic (coded = 3), and All other races (coded = 4). Recoding was done to create a dichotomous variable. Coding was changed to Minority (coded = 0) and Majority (coded = 1). The minority category consists of Black, Hispanic, and all other races. The majority category consists of White responses.

Community Type. For the Community Type independent variable, participants selected city-large (coded = 1), city-midsize (coded = 2), city-small (coded 3), suburb-large (coded 4), suburb-midsize (coded = 5), suburb-small (coded 6), town-fringe (coded 7), town-distant (coded = 8), town-remote (coded = 9), rural-fringe (coded = 10), rural-distant (coded = 11), and rural-remote (coded = 12). Recoding was done to create a dichotomous variable. Coding was changed to non-rural (coded = 0), and rural (coded = 1). The non-rural category consists of city-large, city-midsize, city-small, suburb-large, suburb-midsize, and suburb-small. The rural category consists of town-fringe, town-distant, town-remote, rural-fringe, rural-distant, and rural-remote.

Census Region. For the census region independent variable, participants selected northeast (coded = 1), south (coded = 2), Midwest (coded = 3), and west (coded = 4).

Household Income. The Household Income independent variable was measured through participant responses. The 2012 U.S. Census Bureau poverty level for 2012 was set at $23,050 (total yearly income) for a family with four members. The NCES 2007 Parent and Family Involvement in Education Survey has an average household membership of 3.9 members (M = 3.90, SD = 1.18). No recoding was necessary for this variable. For the Household Income independent variable coding and descriptive statistics see table 3.2.

Table 3.2

9-12 Household Income Independent Variable Coding, n = 2,971

Coding	*Income Range*	*N*	*% of sample*
1	$5,000 and Less	52	1.8
2	$5,001 - $10K	67	2.3
3	$10,001 - $15K	103	3.5
4	$15,001 - $20K	99	3.3
5	$20,001 - $25K	140	4.7
6	$25,001 - $30K	125	4.2
7	$30,001 - $35K	124	4.2
8	$35,001 - $40K	136	4.6
9	$40,001 - $45K	99	3.3
10	$45,001 - $50K	130	4.4
11	$50,001 - $60K	290	9.8
12	$60,001 - $75K	382	12.9
13	$75,001 - $100K	457	15.4
14	OVER $100K	767	25.8
Total		2971	100.0

Parental Involvement in the School. The observed variable of *Parental Involvement in the School* was measured by doing an exploratory factor analysis of questions asked of parents about their participation in school activities at the physical location of the school. The questions asked of parents pertain directly to their involvement in activities in the school building. Each

statement was assessed using a dichotomous scale ranging from 0 = "No" to 1 = "Yes". Through an exploratory factor analysis these statements were factored into single constructs that measures parent involvement in the school.

Factor Analysis for Parental Involvement in the School. Factor analysis for parental involvement in the school construct was created utilizing an exploratory factor analysis run on 8 statements. Tabachnick and Fidell (2007) state a "factor analysis is the statistical technique applied to a single set of variables when the researcher is interested in discovering which variables in the set form coherent subsets that are relatively independent of one another" (p. 607). Tabachnick and Fidell also state that "when scores on factors are estimated for each subject, they are often more reliable than scores on individual observed variables" (p. 608). Research done by Percy (1976) validates the use of dichotomous variables in factor analysis by examining correlation coefficients based on a 5-point Likert scale and a 2-point dichotomous variable. Findings from the Percy (1976) study revealed factor loading results that were almost identical. A principle component with a varimax rotation was used for the factor analysis, which yielded two factors with eigenvalues greater than one and explained 47% of the sample variation. A .45 factor loading was used for acceptance of an item in interpretation of the factor. Tabachnick and Fidell state, "as a rule of thumb only variables with loadings of .32 and above are interpreted. The greater the loading, the more the variable is a pure measure of the factor" (p. 649). Kaiser's measure of sampling adequacy (KMO) was .75 and Tabachnick and Fidell note that "values of .6 and above are required for good FA" (p.614).

From the original eight survey items, four items aligned to represent one factor and four items aligned to represent a second factor. Through interpretation of the aligned items it was determined to utilize both factors to create the factored variables – *active parent involvement in*

the school (eigenvalue = 2.45, variance explained = 31%) and – *attending a meeting in the school* (eigenvalue = 1.28, variance explained = 16%). Table 3.3 reports the factor structures and loadings.

Table 3.3

Factor Analysis for Parental Involvement in the School Constructs

Item	Factor Loadings
Active Parent Involvement in the School (α = .650)	
Volunteered at school/committee	.747
Participated in school fundraising	.701
Served on a school committee	.670
Attended school/class event	.634
Attending a meeting in the School (α = .554)	
Attended parent/teacher conferences	.734
Attended guidance counselor meeting	.623
Attended parent/teacher organization meeting	.618
Attended general school meeting	.598

Parental Involvement in the Home. The observed variable of Parental Involvement in the Home was measured by doing an exploratory factor analysis of questions asked of parents about their participation at home with educational activities. The questions asked of parents pertain directly to their involvement in supporting the student in the home with education. Each statement was assessed using a dichotomous scale ranging from 0 = "No" to 1 = "Yes". Through an exploratory factor analysis these statements were factored into single constructs that measures parent involvement in the home.

Factor Analysis for Parental Involvement in the Home. Factor analysis for parental involvement in the home construct was created by utilizing an exploratory factor analysis run on nine statements. A principle component with a varimax rotation was used for the factor analysis, which yielded three factors with eigenvalues greater than one and explained 58% of the sample variation. A .45 factor loading was used for acceptance of an item in interpretation of the factor. Kaiser's measure of sampling adequacy (KMO) was .71.

From the original nine survey items, four items aligned to represent one factor, three items aligned to represent a second factor, and two items aligned to represent a third factor. Through interpretation of the aligned items it was determined to utilize the first and second factor to create the factored variables – *homework rules for parent involvement in the home* (eigenvalue = 2.50, variance explained = 28%), and– *education expectations for parent involvement in the home* (eigenvalue = 1.63, variance explained = 46%). Table 3.4 reports the factor structures and loadings.

Table 3.4

Factor Analysis for Parental Involvement in the Home Constructs

Item	Factor Loadings
Homework Rules for Parent Involvement in the Home (α = .655)	
Check to see that homework is done	.772
Family rules about doing homework	.754
Help child with homework	.623
Place in home for homework	.515
Education Beyond High School Parent Involvement in the Home (α = .565)	.880
Plan to pay for education after high school	.842
Expectation for education beyond high school	.736
Family started education savings account	.640

School Communication Home. The observed variable of School Communication Home was measured by doing an exploratory factor analysis of questions asked of parents about communication they have received from the school. The questions asked of parents pertain directly to communication initiated by the school to the parent or guardian. Each statement was assessed using a dichotomous scale ranging from 0 = "No" to 1 = "Yes". Through an exploratory factor analysis these statements were factored into a single construct that measures communication from the school.

Factor Analysis for School Communication Home. Factor analysis for School Communication Home construct was created by utilizing an exploratory factor analysis run on 7 statements. A principle component with a varimax rotation was used for the factor analysis, which yielded two factors with eigenvalues greater than one and explained 49% of the sample variation. A .45 factor loading was used for acceptance of an item in interpretation of the factor. Kaiser's measure of sampling adequacy (KMO) was .80.

From the original seven survey items, five items aligned to represent one factor and two items aligned to represent a second factor. Through interpretation of the aligned items it was determined to utilize both factors to create the factored variables – *general school communication home* (eigenvalue = 2.70, variance explained = 34%) and – *personal school communication home* (eigenvalue = 1.23, variance explained = 15%). Table 3.5 reports the factor structure and loadings.

Table 3.5

Factor Analysis for School Communication Home Constructs

Item	Factor Loadings
General School Communication Home (α = .756)	
School provides information on expected role of parents	.772
School helps parents help their child with homework	.725
School tells parents why child is in a certain class	.714
School informs parents how to plan for college/voc.	.681
School informs parents how child is doing	.620
Personal School Communication Home (α = .426)	
School called you on the phone	.773
School sent family personal notes	.773

Dependent Variable

The dependent variable is outlined below with an explanation of the measured response from the NCES 2007 Parent and Family Involvement in Education Survey.

Overall Grades. The dependent variable Overall Grades was measured through participant responses on the survey. For the Overall Grades dependent variable, administrators of the survey marked Inapplicable (coded = -1), Mostly A's (coded = 1), Mostly B's (2), Mostly C's (coded = 3), Mostly D's or lower (coded = 4) or Child's school doesn't give these grades, (coded = 5). Recoding will be done by creating a new variable. Coding will be changed to Mostly D's or lower (coded = 1), Mostly C's (coded = 2), Mostly B's (3), and Mostly A's (coded = 4). Codes (-1 and 5) will be removed.

Summary of Variables and Connections to Theoretical Framework

Table 3.6 outlines a summary review of variables used in this research study, the correlated sphere of human development aligned to Bronfenbrenner's bioecological model of human development, and method of measurement.

Table 3.6

Connection to Theoretical Framework and Review of Measurement Variables

System	Variable	Type	Description (Measured by)
Macro	Grade Level	IV	9 = 9th grade, 10 = 10th Grade, 11 = 11th Grade, 12 = 12th Grade
Macro	Gender of Child	IV	1 = Male, 2 = Female
Macro	Ethnicity	IV	Recoded to dichotomous variable: 0 = non-white; 1 = white
Macro	Community Type	IV	Recoded to dichotomous variable: 0 = non-rural; 1 = rural
Macro	Census Region	IV	1 = Northwest, 2 = South, 3 = Midwest, 4 = West
Macro	Household Income	IV	See Table 3.2
Micro	Parent Involvement at School - *Active*	IV	Construct created based on factor analysis
Micro	Parent Involvement at School - *Active*	IV	Construct created based on factor analysis
Micro	Parent Involvement at Home – *Homework Rules*	IV	Construct created based on factor analysis
Micro	Parent Involvement at Home – *Education Expectations*	IV	Construct created based on factor analysis
Exo	Communication from School - *General*	IV	Construct created based on factor analysis
Exo	Communication from School - *Personal*	IV	Construct created based on factor analysis
Micro	Overall Grades Achieved	DV	Recoded to: Mostly D's or lower = 1, Mostly C's = 2, Mostly B's = 3, Mostly A's = 4.

Data Analysis and Research Questions

Several statistical measures were utilized in this study to answer the research questions pertaining to the NCES 2007 Parent and Family Involvement in Education Survey. Both

descriptive and inferential statistics were used to analyze the data. This section addresses the analysis used to answer each research question.

Descriptive Statistical Analysis

SPSS v.20 was used to report means, standard deviations, and frequencies on all independent and dependent variables. Descriptive statistics were used to answer question 1 - What are the demographic characteristics of high school parents who participated in the NCES 2007 Parent and Family Involvement in Education Survey? Table 3.1 provides details for grade level of student, student gender, ethnicity of child, community type, and census regions surveyed.

Inferential Statistical Analyses

Independent samples *t*-tests and multivariate analyses were conducted on the NCES 2007 Parent and Family Involvement in Education Survey data to answer research questions two and three.

Independent samples t-test. Twelve independent samples *t*-tests were conducted to determine if there was a difference between rural and non-rural students' parents and male and female students' parents with regard to their parent involvement practices as well as school communication home. The twelve specific independent sample *t*-tests conducted were:

a) Is there a statistically significant difference between rural and non-rural high school parents in active parent involvement in the school?
b) Is there a statistically significant difference between rural and non-rural high school parents in attending a meeting in the school?
c) Is there a statistically significant difference between rural and non-rural high school parents in homework rules for parent involvement in the home?

d) Is there a statistically significant difference between rural and non-rural high school parents in education expectations for parent involvement in the home?

e) Is there a statistically significant difference between rural and non-rural high school parents in general school communication home to parents?

f) Is there a statistically significant difference between rural and non-rural high school parents in personal school communication home to parents?

g) Is there a statistically significant difference between male and female high school parents in active parent involvement in the school?

h) Is there a statistically significant difference between male and female high school parents in attending a meeting in the school?

i) Is there a statistically significant difference between male and female high school parents in homework rules for parent involvement in the home?

j) Is there a statistically significant difference between male and female high school parents in education expectations for parent involvement in the home?

k) Is there a statistically significant difference between male and female high school parents in general school communication home to parents?

l) Is there a statistically significant difference between male and female high school parents in personal school communication home to parents?

Correlations. Pearson product-moment correlations were used to assess the degree that the variables used in this study were linearly aligned (Green & Salkind, 2011). Assumptions stated by Green and Salkind (2011) to conduct correlation analysis was also be utilized in this study; (1) the variables are bivariately normally distributed, (2) the cases represent a random sample from the population and the scores on variables for one case are independent of scores on

these variables for other cases (p. 258). Effect sizes were interpreted for positive or negative relationships between the variables. A regression model was used for question four and will be further examined in the following section.

Multiple Regression. Multiple regression analyses with a sequential hierarchical approach was conducted to answer research question four; to what extent does a) parent characteristics b) parent involvement in the school, c) parent involvement in the home, and d) school communication home predict academic grades of high school students (9th-12th grade) in public high schools? Exploratory factor analysis was conducted in order to complete the regression analysis. The factor analysis for the constructs parent involvement in the school, parent involvement in the home, and school communication home were described in the previous section. A correlation matrix was prepared for the regression analysis and data screened for correlation analysis (Green & Salkind, 2011).

Multiple regression was appropriate for this study because of the ability of the researcher to assess the relationship between the dependent variable and several independent variables (Tabachnick & Fidell, 2007). The equation for multiple regression (Tabachnick & Fidell, 2007):

$$Y' = A + B_1X_1 + B_2X_2 + \cdots + B_kX_k$$

represents the predicted value of the dependent variable, *Y'* which in this study would be overall grades achieved by students, *A* is "the value of Y when all the X values are zero" (Tabachnick & Fidell, 2007, p. 118). The *X* values represent each independent variable and the *B*s are the independent variables assigned coefficients.

Regression Models and Theoretical Connection.

Factors created through the factor analysis were entered in the hierarchical regression model in blocks to better predict independent variables influence on the dependent variable

independently or above and beyond. Aligned with Bronfenbrenner's (2005) bioecological framework this study entered the macrosystem variables of demographics into the first block, the microsystem variables into the second block, and the exosystem variables into the third block. Tabachnick and Fidell (2007) note the ability of the sequential hierarchical approach to analyze independent variables in order of preference by the researcher. This method allowed the use of the bioecological framework and systems of influence on development to be separated according to the macrosystem, microsystem, and exosystem.

The implementation of the macrosystem in the first block aligns to the strong belief by Bronfenbrenner (2005) that this sphere was a central influence on the development of individuals in the bioecological framework. With the macrosystem demographic variables entered first this study was able to determine the extent of prediction on the dependent variable, overall grades. Bronfenbrenner (2005) explains that the macrosystem is difficult to change because of the societal and embedded nature of its characteristics which in turn would be difficult to influence, unless targeted from a national standpoint.

Independent variables to include the microsystems of parent involvement at school and parent involvement at home, coupled with the exosystem variable of school communication home are more readily influenced on a state, local, and individual basis as practitioners grapple with strategies to improve academic achievement of students. For this reason, the second block was entered with these microsystem independent variables. Increasing school communication home or educating parents about best practices to support their child at school and at home can be influenced potentially with minimal exposure.

Regression model for overall grades – research question four. To what extent do parent demographics (grade level, gender, ethnicity, community type, census region, household

income), parent involvement in the school (volunteer at school, serve on a school committee, participate in school fundraising, attended a school/class event), parent involvement in the home (place in the home for homework, family rules about doing homework, checking to see that homework is done), and school communication home (school provides information on parents expected role, school helps parents help child with homework, school tells parents why child is in a certain class, school tells parents how to plan for college or vocational school, school informs parents on how child is doing) predict academic grades of high school students (9th-12th grade)? This research question was answered by running a sequential hierarchical regression analysis on the following model where overall grades = macrosystems (grade level + gender of child + community type + ethnicity of the child + census region + household income) + microsystems (parent involvement at school + parent involvement at home) + exosystem (school communication home). Figure 3.1 depicts a visual of the regression model aligned to each variable that will be analyzed.

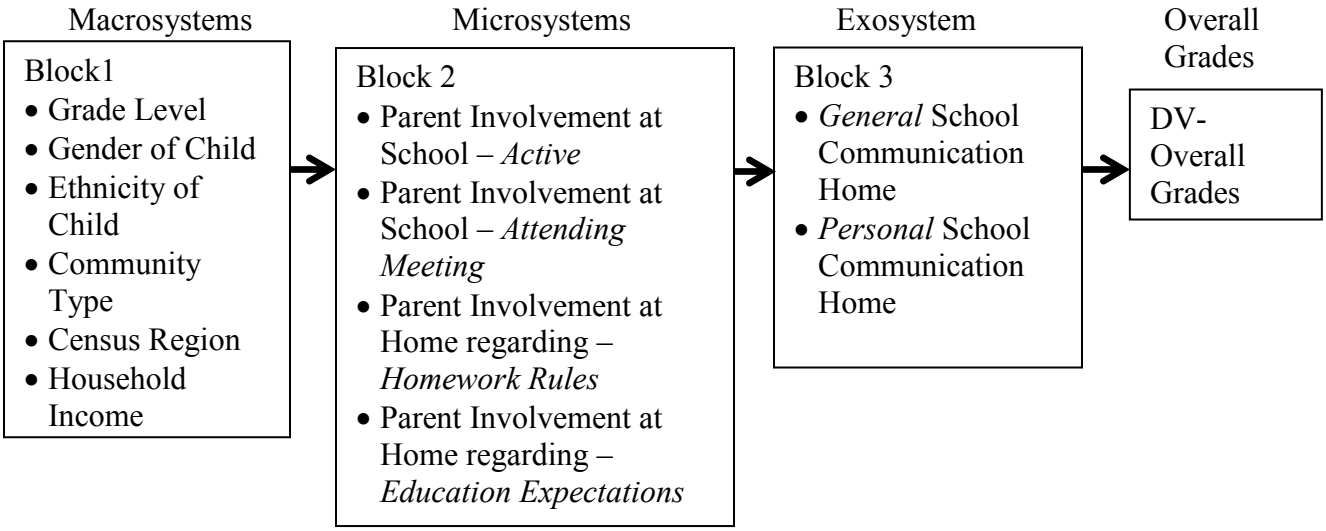

Figure 3.1. Visual Model of Sequential Hierarchical Regression Analyses

Delimitations

This study focused on parent involvement of students at a particular time in their educational life span. Delimitations are the cross-sectional nature of this study and the year the survey was completed; 2007. Delimitations also included the use of the phone surveys due to some parents deciding not to participate or bias in answers because they didn't want to admit low cooperation with the school or their child's education. Parent involvement actions characterized by conversations about the importance of school, goal setting with students, and planning for higher levels of education will not be reviewed due to the scope of this study.

Limitations

This study focused only on specific grade levels at a specific point in time for participants. Research that is based on a longitudinal design may prove beneficial in order to capture changes in perceptions of parents as their child goes through the formal K-12 educational process. An added limitation is the strict use of only survey questions in the NCES 2007 Parent and Family Involvement in Education Survey. Only the questions posed to respondents during the phone interview are able to be analyzed. Even when the researcher would have liked to probe further with other questions it was not permissible. A limitation also exits to the area of research described as academic socialization in that this is beyond the scope of this study due to questions asked of respondents.

Summary

This chapter explained the methodological approach that will be used in this study. Research designs, independent and dependent variables, factor analysis, and regression analyses used in this study have been addressed. Chapter 4 will address the results of findings and data analyses.

CHAPTER 4

RESULTS

"Children need the consistent and reliable care of their parents and other adults, but to provide that care parents need the support of employers, schools and the society as a whole."

Bronfenbrenner (2005)

The purpose of this study was to gain an understanding of the types of parental involvement predictors that influence academic achievement at the high school level by examining the National Center for Education Statistics - 2007 Parent and Family Involvement in Education Survey. This study was conducted using Bronfenbrenner's (2005) bioecological theory of human development in order to inspect academic achievement of the student as affected by various spheres of influence, to include parental involvement at home, parental involvement at school, and communication from the school. The hypothesis for this study was that parental involvement at school, parental involvement at home, and communication from school influenced academic achievement for high school students.

This chapter provides the results of the data analysis and answers the four research questions that guided this study. The chapter is divided into six sections. The first section describes data screening procedures to ensure assumptions of data normality in order to conduct data analyses. The second section details the results of all descriptive statistics conducted on demographic variables and all independent and dependent variables. The third section reports the correlations between all independent and dependent variables for multiple regression analysis. The fourth section reports the results of the independent samples *t*-tests used to answer research question two and three. The fifth section answers research question four with a detailed

explanation of the sequential (hierarchical) regression analyses. The final section answers each of the research questions used in this study.

Data Screening and Assumptions of Normality

In advance of conducting descriptive and inferential analyses, all data were subjected to screening for outliers and missing values. Results of data screening revealed no outliers or missing values for the independent and dependent variables. Additional screening was conducted to assess whether the variables met assumptions of normality. Assumptions of normality are required precursors for tests of statistical significance (Tabachnick & Fidell, 2007).

Vogt and Johnson (2011) describe normality of data as a statistical assumption that is essential for statistical tests. Normality of variables can be assessed using statistical and graphical methods (Tabachnick & Fidell, 2007). Skewness depicts the symmetry of the distribution related to the mean value while kurtosis represents the peakedness of the distribution, commonly referred to as a bell shaped distribution (Tabachnick & Fidell, 2007, p. 79). Skewness and kurtosis index scores and graphical views were used in this study to evaluate the independent and dependent variables.

Both skewness and kurtosis were evaluated for the independent and dependent variables used in this study. The assessment of normality for all variables displays half of the variables with a positive skew and the remaining half with negative skew. Positive skew results from positive numerical data and graphically distributes values to the right or upward while negative output places values to the left or downward (Vogt & Johnson, 2011). Graphic and numeric displays of the data reveal kurtosis values greater than $\pm$ 1 (Vogt & Johnson, 2011) in six of the variables, but Tabachnick and Fidell (2007) claim that in large samples this will not deviate

enough from normality to negatively impact analysis. Results of the assessment of normality for the independent and dependent variables used in this study are reported in Table 4.1.

Table 4.1

Assessment of Normality for Variables in the Model (n = 2,971)

Variables	Skew	SE of Skew	*Kurtosis*	*SE of Kurtosis*
Grade Level	-.037	.045	-1.318	.090
Gender of Child (1 = Male)	.034	.045	-2.00	.090
Ethnicity of Child (1 = Non-Minority)	-.611	.045	-1.628	.090
Community Type (1=Non-Rural)	-.765	.045	-1.416	.090
Census Region	.017	.045	-1.170	.090
Household Income	-.93	.045	-.38	.090
Parent Involvement in the School				
Active	.240	.045	-.923	.090
Attending Meeting	-.253	.045	-.915	.090
Parent Involvement in the Home				
Homework Rules	-.943	.045	-.103	.090
Education Expectations	-.680	.045	.035	.090
School Communication to Home				
General	-.693	.045	-.757	.090
Personal	.101	.045	-1.412	.090
Overall Grades*	-.744	.045	-.226	.090

* Dependent Variable

Frequencies and Descriptive Statistical Analyses

Descriptive statistics were run for each of the variables in this study as well as demographic information related to the participants. Table 4.2 reports the results of descriptive analyses for demographic data as well as each of the independent and dependent variables used

in the study. Statistics include the range (minimum and maximum values), mean, and standard deviation for each variable.

Table 4.2

Descriptive Statistics for Demographic Data, Independent, and Dependent Variable (n = 2,971)

Variables	Min	Max	*Mean*	*SD*
Grade Level[a]	9	12	10.53	1.10
Gender of Child[b]	1	2	1.49	.50
Ethnicity of Child[c]	0	1	.65	.48
Community Type[d]	0	1	.68	.47
Census Region[e]	1	4	2.60	1.03
Household Income[f]	1	14	10.41	3.76
Parent Involvement in the School				
Active	0	4	1.71	1.25
Attending Meeting	0	4	2.28	1.23
Parent Involvement in the Home				
Homework Rules	0	4	2.87	1.24
Education Expectations	0	3	2.02	.84
School Communication to Home				
General	0	5	3.42	1.62
Personal	0	2	.94	.80
Overall Grades[c]	1	4	3.17	.85

[a]Scale: 9 = 9th Grade, 10 = 10th Grade, 11 = 11th Grade, 12 = 12th Grade
[b]Scale: 1 = Male, 2 = Female
[c]Scale: 0 = Black and all other races, 1 = White
[d]Scale: 0 = Rural, 1 = Non-Rural
[e]Scale: 1 = Northwest, 2 = South, 3 = Midwest, 4 = West
[f]Scale: 1 = Below $5,000, 14 = Above $100,000

Correlations

This study examined the relationships between variables using Pearson correlation coefficients. Correlation is used to measure the association between variables (Tabachnick &

Fidell, 2007), but does not necessarily indicate causation (Vogt & Johnson, 2011). Pearson correlations assess the degree that variables are linearly related in a sample with computed results ranging from +1 to -1 (Tabachnick & Fidell, 2007). Green and Salkind (2011) note that "correlation coefficients of .10, .30, and .50, irrespective of sign, are, by convention, interpreted as small, medium, and large coefficients, respectively", but preface this with, "What is large or small depends on the discipline within which the research questions is being asked (p. 259). Tabachnick and Fidell (2007) describe variables that are too highly correlated as having multicollinearity, identified by correlations of .90 or higher, which result in variables that measure the same concept.

Pearson correlation coefficients were computed among each of the independent and dependent variables, resulting in 78 correlation coefficients represented in Table 4.3. Using Tabachnick and Fidell's (2007) guide, the data were examined for incidences of .90 or greater correlations with no instances of multicolinearity noted between the variables. To avoid the risk of Type I error in determining statistical significance when computing multiple correlations, the Bonferonni approach was used to determine the new level for statistical significance (Vogt & Johnson, 2011). The Bonferroni approach involves dividing a generally accepted alpha level (.05) by the number of correlations (78), which results in a new alpha level (.000641). In this study, correlations required a *p* value of .000641 or lower to be considered significant. Using .000641 as the revised and conservative significance level, 32 of the 78 correlations were deemed significant. These 32 significant correlations are noted with an asterisk (*) in Table 4.3.

Using the Green and Salkind (2011) interpretation of correlation coefficient size, of the 32 statistically significant correlations, 20 were considered to have a small (low) relationship and three were considered to have a medium (moderate) relationship. The remaining nine

correlations were statistically significant, but had correlation coefficients less than .10. Results of the correlation analysis revealed no large (high) correlations. Within the sections below, each statistically significant correlation of at least .10 is described, based on the strength of the relationship (coefficient size). In each pair of correlations, positive results reflect that as one variable increases in size, the other variable also increases, while a negative correlation reflects that as one variable increases in size, the other variable decreases (Green & Salkind, 2011).

High Correlations

Results of the correlation analysis revealed no large (high) correlations.

Moderate Correlations

Three correlations were considered to have a medium (moderate) relationship based on Green and Salkind's (2011) recommendations for the interpretation of the correlation coefficient.

Demographics. The variable of ethnicity ($r = .34$, $p < .000641$) showed a significant correlation with the variable of household income. This indicates participants coded majority on the variable of ethnicity, coded 0 = minority and 1 = majority, also had higher scores on the variable of household income.

Parent involvement in school. A significant positive relationship was found between the variable of active parent involvement in school and the variable of attending a meeting in school ($r = .30$, $p < .000641$). This reveals as participants scored higher on the active parent involvement in school variable, they also scored higher on the attending a meeting in the school variable.

Parent involvement at home. A significant positive relationship was found between the variable of parent involvement at home - education expectations and the variable of household income ($r = .36$, $p < .000641$). As participants scored higher on the parent involvement at home

Table 4.3

Correlation Matrix – All Independent and Dependent Variables (n = 2,971)

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Grade Level (9 = 9th Grade)	--												
2	Gender (1 = Male)	.01	--											
3	Ethnicity of Child (0 = Minority)	.04	.02	--										
4	Community Type (0 = Rural)	-.01	-.02	-.16*	--									
5	Census Region (1 = Northwest)	-.03	-.02	-.08*	-.03	--								
6	Household Income	.06	-.02	.34*	.04	.01	--							
7	PI in the School *Active*	.04	.07*	.19*	-.07*	-.00	.29*	--						
8	PI in the School *Attending Meeting*	-.03	-.03	-.06	.03	.03	.04	.30*	--					
9	PI in the Home *Homework Rules*	-.15*	.01	-.03	.03	.01	.02	.08*	.14*	--				
10	PI in the Home *Education Expectations*	-.01	.03	.20*	.05	-.01	.36*	.27*	.14*	.10*	--			
11	School Communication to Home- *General*	.02	.01	.03	.01	-.03	.06	.19*	.18*	.09*	.09*	--		
12	School Communication to Home- *Personal*	.01	-.07*	-.05	.05	.01	.01	.09*	.21*	.07*	-.01	.17*	--	
13	Overall Grades	.06	.19*	.16*	-.04	-.01	.22	.24*	-.01	-.05	.22*	.18*	-.13*	--

Note: * $p < .000641$ Bonferonni adjustment for multiple correlations to minimize chances of a Type 1 error.

regarding education expectation variable, they also scored higher on the variable of household income.

Low Correlations

Twenty correlations were considered to have a low relationship based on Green and Salkind's (2011) recommendations for the interpretation of the correlation coefficient. Of those correlations, seven were relationships with the dependent variable related to overall grades. Thirteen additional correlations revealed relationships amongst the other independent variables. Nine additional variables were statistically significant, but had correlation coefficients below .10. The correlations with coefficients above .10 are described in the following sections, with correlations related to the dependent variable (overall grades) addressed first, followed by the correlations between the independent variables (constructs).

Overall grades. Each of the seven correlations related to overall grades are reported in the following sections.

Demographics. The variable of overall grades showed a significant positive correlation with the demographic variable of gender of child variable ($r = .19$, $p < .000641$). This indicates participants with higher scores on the variable of overall grades were categorized as female on the variable of gender of child, coded 1 = male and 2 = female.

The variable of overall grades showed a significant positive correlation with the demographic variable of ethnicity of child variable ($r = .16$, $p < .000641$). As participants scored higher on the variable of overall grades they were coded as majority status for the variable of ethnicity of child, coded 0 = minority and 1 = majority.

The variable of overall grades showed a significant positive correlation with the demographic variable of household income variable ($r = .22$, $p < .000641$). This indicates

participants with higher scores on the variable of overall grades also had higher scores on the variable of household income.

Parent involvement in school. The variable of overall grades showed a significant positive correlation with the parent involvement in school construct variable of active parent involvement in school ($r = .24$, $p < .000641$). As participants scored higher on the variable of overall grades they also scored higher on the construct variable of active parent involvement in school.

Parent involvement at home. The variable of overall grades showed a significant positive correlation with the parent involvement at home construct variable of parent involvement at home- education expectations ($r = .22$, $p < .000641$). As participants scored higher on the variable of overall grades they also had higher scores on the construct variable of parent involvement at home- education expectations.

Communication from school. The variable of overall grades showed a significant positive correlation with the general communication from school construct variable ($r = .18$, $p < .000641$). This indicates participants with higher scores on the variable of overall grades also had higher scores on the construct variable of general communication from school.

The variable of overall grades showed a significant negative correlation with the personal communication from school construct variable ($r = -.13$, $p < .000641$). As participants scored higher on the variable of overall grades they had lower scores on the construct variable of personal communication from school.

Demographics. The variable of ethnicity of child showed a significant negative correlation with the community type variable ($r = -.16$, $p < .000641$). This indicates that majority participants on the variable of ethnicity of child, coded 0 = minority and 1 = majority,

were significantly correlated to rural on the variable of community type, coded 0 = rural and 1 = non-rural.

The variable of household income showed a significant positive correlation with the active parent involvement in school construct variable ($r = .29$, $p < .000641$). As participants scored higher scores on the variable of household income they also had higher scores on the construct variable of active parent involvement in school.

Between-construct correlations. The remaining 10 statistically significant correlations revealed relationships between four of the independent variable constructs. Six of the correlations involved the parent involvement in home construct variables, and four of the correlations involved the communication from school construct variables. Each of these relationships is reported in the sections below, according to the category of construct variable.

Parent Involvement at home regarding - homework rules. The parent involvement at home regarding - homework rules variable showed a significant negative relationship with the grade level of the student ($r = -.15$, $p < .000641$). This shows as participants scored higher on the variable of parent involvement at home regarding - homework rules, they scored lower on the grade level of student variable.

A significant positive relationship was found between the variable of parent involvement at home regarding - homework rules and the variable of attending a meeting in school ($r = .14$, $p < .000641$). As participants scored higher on the parent involvement at home regarding - homework rules variable, they scored higher on the variable of attending a meeting in school.

Parent involvement at home regarding - education expectations. The variable of parent involvement at home regarding - education expectations ($r = .20$, $p < .000641$) showed a significant positive correlation with the ethnicity of child variable. This indicates participants

with higher scores on the variable of parent involvement at home regarding - education expectations also had higher scores on the variable of ethnicity of child, coded 0 = minority and 1 = majority.

The variable of parent involvement at home regarding - education expectations showed a significant positive correlation with the variable active parent involvement in school ($r = .27$, $p < .000641$). As participants scored higher on the variable of parent involvement at home regarding - education expectations they scored higher on the variable active parent involvement at school.

The variable of parent involvement at home regarding - education expectations showed a significant positive correlation with the variable attending a meeting in school ($r = .14$, $p < .000641$). This revealed that as participants scored higher on the variable of parent involvement at home regarding - education expectations they scored higher on the variable attending a meeting at school.

The variable of parent involvement at home regarding - education expectations showed a significant positive correlation with the variable parent involvement at home regarding - homework rules ($r = .10$, $p < .000641$). This indicates participants with higher scores on the variable of parent involvement at home regarding - education expectations also had higher scores on the variable parent involvement at home regarding - homework rules.

General communication from school. A significant positive relationship was found between the variable of general communication from school and the variable of active parent involvement in school ($r = .19$, $p < .000641$). This reveals as participants scored higher on the general communication from school variable, they also scored higher on the variable of active parent involvement in school.

A significant positive relationship was found between the variable of general communication from school and the variable of attending a meeting in school ($r = .18$, $p < .000641$). As participants scored higher on the general communication from school variable, they also scored higher on the variable of attending a meeting in school.

Personal communication from school. A significant positive relationship was found between the variable of personal communication from school and the variable of attending a meeting in school ($r = .21$, $p < .000641$). As participants scored higher on the personal communication from school variable, they also scored higher on the variable of attending a meeting in school.

A significant positive relationship was found between the variable of personal communication from school and the variable of general communication from school ($r = .17$, $p < .000641$). As participants scored higher on the personal communication from school variable, they also scored higher on the variable of general communication from school.

Independent Samples *t*-tests

Twelve independent samples *t*-tests were conducted to determine if there was a difference between rural and non-rural students and male and female students in the parent involvement practices in the school, at home, and communication from school. The twelve specific independent samples *t*-tests conducted were:

a) Is there a statistically significant difference between rural and non-rural high school parents in active parent involvement in the school?

b) Is there a statistically significant difference between rural and non-rural high school parents in attending a meeting in the school?

c) Is there a statistically significant difference between rural and non-rural high school parents in homework rules for parent involvement in the home?

d) Is there a statistically significant difference between rural and non-rural high school parents in education expectations for parent involvement in the home?

e) Is there a statistically significant difference between rural and non-rural high school parents in general school communication home to parents?

f) Is there a statistically significant difference between rural and non-rural high school parents in personal school communication home to parents?

g) Is there a statistically significant difference between male and female high school parents in active parent involvement in the school?

h) Is there a statistically significant difference between male and female high school parents in attending a meeting in the school?

i) Is there a statistically significant difference between male and female high school parents in homework rules for parent involvement in the home?

j) Is there a statistically significant difference between male and female high school parents in education expectations for parent involvement in the home?

k) Is there a statistically significant difference between male and female high school parents in general school communication home to parents?

l) Is there a statistically significant difference between male and female high school parents in personal school communication home to parents?

Green and Salkind (2011) state three assumptions that the data must meet prior to conducting and an independent samples *t*-test. These assumptions are:

1. The test variable is normally distributed in each of the two populations.

2. The variances of the normally distributed test variable for the populations are equal.
3. The cases represent a random sample from the population, and the scores on the test variable are independent of each other. (Green & Salkind, p. 176)

Prior data screening (described in the first section of this chapter) at the onset of data analysis ensured that assumptions 1 and 3 were met. When conducting the independent samples *t*-tests, Levene's test for equality of variances was interpreted and indicated that variances between the two samples were equal for eight of the tests thus meeting assumption 2.

Analysis of the twelve independent samples *t*-tests indicated that five of the independent samples *t*-tests produced statistically significant results. Specifically, an independent samples *t*-test was conducted to determine if there was a difference between rural and non-rural parents and their active parent involvement in school. The test was significant, $t(2969) = 4.14$, $p < .001$. Rural students ($M = 1.84$, $SD = 1.20$) on the average had parents who displayed higher levels of active parent involvement in the school than non-rural students ($M = 1.64$, $SD = 1.27$). The 95% confidence interval for the difference in the means ranged from .10 to .29. The eta square index indicated that 60% of the variance of active parent involvement in the school was accounted for by whether a student was assigned to the rural or non-rural condition.

An independent samples *t*-test was conducted to determine if there was a difference between rural and non-rural parents and education expectations for parent involvement at home. The test was significant, $t(2969) = -2.76$, $p < .01$. Non-rural students ($M = 2.05$, $SD = .85$) on the average had parents who displayed higher levels of education expectations for parent involvement at home than rural students ($M = 1.95$, $SD = .81$). The 95% confidence interval for the difference in the means ranged from -.16 to -.03. The eta square index indicated that 26% of

the variance of education expectations for parent involvement at home was accounted for by whether a student was assigned to the rural or non-rural condition.

An independent samples *t*-test was conducted to determine if there was a difference between rural and non-rural parents and personal communication from the school. The test was significant, $t(2969) = -2.52$, $p < .05$. Non-rural students ($M = .97$, $SD = .79$) on the average had parents who experienced higher levels of personal communication from the school than rural students ($M = .89$, $SD = .80$). The 95% confidence interval for the difference in the means ranged from -.14 to -.02. The eta square index indicated that 21% of the variance of personal communication from the school was accounted for by whether a student was assigned to the rural or non-rural condition.

An independent samples *t*-test was conducted to determine if there was a difference between male and female students' parents and active parent involvement in the school. The test was significant, $t(2968) = -3.84$, $p < .001$. Female students ($M = 1.79$, $SD = 1.22$) on the average had parents who displayed higher levels of active parent involvement in the school than male students ($M = 1.62$, $SD = 1.28$). The 95% confidence interval for the difference in the means ranged from -.27 to -.09. The eta square index indicated that 49% of the variance of active parent involvement in the school was accounted for by whether a student was identified as a male or female.

An independent samples *t*-test was conducted to determine if there was a difference between male and female students' parents and personal communication from the school. The test was significant, $t(2968) = 3.77$, $p < .001$. Male students ($M = .10$, $SD = .80$) on the average had parents who experienced higher levels of personal communication from the school than female students ($M = .89$, $SD = .78$). The 95% confidence interval for the difference in the

means ranged from .05 to .17. The eta square index indicated that 47% of the variance of active parent involvement in the school was accounted for by whether a student was identified as a male or female. Table 4.4 provides a summary review of results for the independent samples *t*-tests conducted for rural and non-rural students. Table 4.5 provides a summary review of results for the independent samples *t*-tests conducted for male and female students.

Table 4.4

Independent Samples t-tests for Rural / Non-Rural – Summary of Results (n = 2,971)

	Rural		Non-Rural					Confidence Intervals	
	M	*SD*	*M*	*SD*	*t*	*df*	*p*	Lower	Upper
Active Parent Involvement in School	1.84	1.20	1.64	1.27	4.14	1967	.00	.10	.29
Attending a meeting in School*	2.22	1.26	2.30	1.22	-1.79	2969	.07	-.18	.01
Homework Rules for Parent Involvement in the Home*	2.83	1.25	2.89	1.23	-1.41	2969	.16	-.16	.03
Education Expectations for Parent Involvement in the Home*	1.96	.81	2.05	.85	-2.76	2969	.01	-.16	-.03
General Communication from the School*	3.39	1.62	3.44	1.62	-.74	2969	.46	-.17	.08
Personal Communication from the School*	.89	.80	.97	.79	-2.52	2969	.01	-.14	-.02

**Note.* Levene's test for equal variances was not significant, indicating that variances were assumed equal.

Table 4.5

Independent Samples t-tests for Male / Female – Summary of Results (n = 2,971)

	Male		Female					Confidence Intervals	
	M	*SD*	*M*	*SD*	*t*	*df*	*p*	Lower	Upper
Active Parent Involvement in School	1.62	1.28	1.80	1.22	-3.84	2968	.00	-.27	-.09
Attending a meeting in School*	2.31	1.22	2.24	1.24	1.50	2969	.13	-.02	.16
Homework Rules for Parent Involvement in the Home	2.86	1.29	2.89	1.18	-.74	2960	.46	-.12	.06
Education Expectations for Parent Involvement in the Home	1.99	.89	2.04	.78	-1.58	2942	.11	-.11	.01
General Communication from the School*	3.40	1.65	3.45	1.59	-.70	2969	.49	-.16	.07
Personal Communication from the School*	1.00	.80	.89	.78	3.77	2969	.00	.05	.17

**Note.* Levene's test for equal variances was not significant, indicating that variances were assumed equal. Scale for all variables: 1 = Northwest, 2 = South, 3 = Midwest, 4 = West

Multiple Regression Analyses

A sequential hierarchical regression approach was used to determine whether the independent variables were statistically significant predictors of the dependent variables. A sequential hierarchical regression analyses was conducted on each of the three blocks. Based on the theoretical framework of Bronfenbrenner (2005), the independent variables were grouped into blocks based on their identification as a macrosystem, microsystem, and exosystem. The first block included the macrosystem variables of grade level, gender, ethnicity, community type, census region, and household income. The second block added the microsystem variables of

active parent involvement in school, attending a meeting in school, parent involvement at home- homework rules, and parent involvement at home- education expectations. The third block added the exosystem variables of general communication from the school and personal communication from the school. The following sections report the results of the regression analyses on each of the dependent variables.

Overall Grades

A sequential hierarchical regression analysis was conducted on the dependent variable of overall grades. Table 4.6 provides information on the blocks in which the variables were entered into the regression analysis, the unstandardized regression coefficients (*b*), the standard error for the unstandardized regression coefficient (*SE b*), standardized regression coefficients (β), and the variance (R^2) explained for each model (block).

Macrosystem overall grades (block1). Results for the regression analysis indicated that for block 1, $F(6, 2964) = 51.76$, $p < .001$, grade level (β = .042, $p < .05$), gender of student (β = .188, $p < .001$), ethnicity (β = .081, $p < .001$), and household income (β = .196, $p < .001$), were significant predictors for overall grades, accounting for 10% ($R^2 = .095$) of the variance in overall grades.

Macrosystem and Microsystem overall grades (block2). The microsystem variables of active parent involvement in school, attending a meeting in school, parent involvement at home- homework rules, and parent involvement at home- education expectations were added to the hierarchical regression in block 2. Within block 2, $F(4, 2960) = 38.75$, $p < .001$, active parent involvement in school (β = .173, $p < .001$), attending a meeting in school (β = -.063, $p < .01$), parent involvement at home- homework rules (β = -.063, $p < .001$), and parent involvement at

home- education expectations (β = .128, $p < .001$), were significant predictors for overall grades, accounting for 14% ($R^2 = .140$) of the variance in overall grades.

Macrosystem, Microsystem and Exosystem overall grades (block2). The exosystem variables of general communication from the school and personal communication from the school were added to the hierarchical regression in block 3. Within block 3, $F(2, 2958) = 70.37$, $p < .001$, general communication from the school (β = .167, $p < .001$), and personal communication from the school (β = -.141, $p < .001$), were significant predictors for overall grades, accounting for 18% ($R^2 = .179$) of the variance in overall grades.

Table 4.6

Hierarchical Regression Coefficients for Overall Grades (n = 2,971), R^2 = .179

Variable blocks	*b*	*SE β*	β
Macrosystems (block 1)			
Constant	1.832	.161	
Grade Level	.032	.014	.042*
Gender of Student	.320	.030	.188***
Ethnicity	.145	.034	.081***
Community Type	-.049	.032	-.027
Census Region	-.003	.015	-.004
Household Income	.044	.004	.196***
Microsystems (block 2)			
Constant	1.94	.168	
Grade Level	.024	.013	.031
Gender of Student	.291	.029	.171***
Ethnicity	.082	.033	.046*
Community Type	-.035	.032	-.019
Census Region	-.002	.014	-.002
Household Income	.026	.004	.115***
Active Parent Involvement in School	.118	.013	.173***
Attending a Meeting in School	-.044	.013	-.063**
Parent Involvement at Home- Homework Rules	-.043	.012	-.063***
Parent Involvement at Home- Education Expectations	.130	.019	.128***
Exosystems (block 3- full model)			
Constant	1.84	.166	
Grade Level	.024	.013	.031
Gender of Student	.274	.029	.161***
Ethnicity	.071	.033	.040*
Community Type	-.032	.031	-.017
Census Region	.002	.014	.003
Household Income	.027	.004	.118***
Active Parent Involvement in School	.107	.013	.157***
Attending a Meeting in School	-.040	.013	-.058*
Parent Involvement at Home- Homework Rules	-.046	.012	-.067***
Parent Involvement at Home- Education Expectations	.119	.019	.117***
General Communication from the School	.088	.009	.167***
Personal Communication from the School	-.151	.019	-.141***

Note[1]. R^2 = .095 for block 1; .140 for block 2; .179 for block 3 – full model
*Note[2]. * p < .05, ** p < .01, *** p < .01*

Summary Answers to Research Questions

Each of the four research questions is answered in this section, using results from the data analyses presented in this chapter.

Research Question 1 – Background Characteristics

What are the demographic characteristics of high school parents who participated in the NCES 2007 Parent and Family Involvement in Education Survey?

The sample consisted of 2,971 participants, ranging in grade level from 9th to 12th grade (M = 10.53, SD = 1.10), each of whom identified as male (51%) and female (49%). The majority of participants identified as white (65%) compared to minority (35%). The majority of participants reporting living in a community type described as non-rural (68%), with 32% indicating rural community type residence. Participants were sampled from various parts of the country to include: Northeast (15.3%), South (35.0%), Midwest (24.4%), and West (25.3%). Household income (M = 10.41, SD = 3.76), ranged from under $5,000 to over $100,000. Of the 2,971 participants 19.7% indicated a household income less than $30,000, 16.5% indicated a household income between $30,001 and $50,000, 38.1% indicated a household income between $50,001 and $100,000, and 25.8% indicated a household income over $100,000.

Research Question 2 – Difference between Rural and Non-rural Groups

Is there a statistically significant difference between rural and non-rural high school parents for a) active parent involvement in the school, b) attending a meeting *in the school, c) homework rules for parent involvement in the home, d) education expectations for parent involvement in the home, e) general school communication home to parents, and f) personal school communication home to parents?*

Results for each of the six independent samples *t*-tests revealed that three were statistically significant differences between rural and non-rural students for parent involvement practices and communication from the school. The difference between rural and non-rural parents and their active parent involvement in school revealed rural students on the average had parents who displayed higher levels of active parent involvement in the school than non-rural students. Sixty percent of the variance of active parent involvement in the school was accounted for by whether a student was assigned to the rural or non-rural condition.

The difference between rural and non-rural parents and education expectations for parent involvement at home revealed non-rural students on the average had parents who displayed higher levels of education expectations for parent involvement at home than rural students. Twenty-six percent of the variance of education expectations for parent involvement at home was accounted for by whether a student was assigned to the rural or non-rural condition.

The difference between rural and non-rural parents and personal communication from the school revealed non-rural students on the average had parents who experienced higher levels of personal communication from the school than rural students. Twenty-one percent of the variance of personal communication from the school was accounted for by whether a student was assigned to the rural or non-rural condition.

Research Question 3 – Difference between Male and Female Groups

Is there a statistically significant difference between male high school students and female high school students for a) active parent involvement in the school, b) attending a meeting *in the school, c) homework rules for parent involvement in the home, d) education expectations for parent involvement in the home, e) general school communication home to parents, and f) personal school communication home to parents?*

Results for each of the six independent samples *t*-tests revealed that two were statistically significant differences between male and female students for parent involvement practices and communication from the school.

The difference between male and female students' parents and active parent involvement in the school revealed female students on the average had parents who displayed higher levels of active parent involvement in the school than male students. Forty-nine percent of the variance of active parent involvement in the school was accounted for by whether a student was designated a male or female.

The difference between male and female students' parents and personal communication from the school revealed male students on the average had parents who experienced higher levels of personal communication from the school than female students. Forty-seven percent of the variance of active parent involvement in the school was accounted for by whether a student was designated a male or female.

Research Question 4 – Overall Grades

To what extent do parent demographics, parent involvement in the school, parent involvement in the home, and school communication home to parents predict academic grades of high school students (9th-12th grade)?

Results for the hierarchical regression analysis revealed that the macrosystem variables (gender of student, ethnicity, household income) were statistically significant predictors of overall grades in the full model. The macrosystem variables of grade level, community type, and census region were not a statistically significant predictor of overall grades. This suggests participants who are more likely to have higher overall grades were also more likely to be female, white, and have higher household incomes.

All four of the microsystem variables – active parent involvement in school, attending a meeting at school, parent involvement at home regarding - homework rules, parent involvement at home regarding - education expectations– were statistically significant predictors for overall grades in the full model. Active parent involvement in school and parent involvement at home regarding - education expectations revealed positive predicting values for overall grades. This suggests that participants who are more likely to have higher overall grades were also more likely to have parents who were actively involved in their school and displayed involvement at home through educational expectations. Two of the predictors had a negative predicting value indicating that higher responses for parent involvement at home regarding - homework rules and attending a meeting in the school predicted lower overall grades.

Both of the exosystem variables – general communication from the school and personal communication from the school – were statistically significant predictors for overall grades in the full model. General school communication home revealed positive predicting value for overall grades. This suggests that participants who are more likely to have higher overall grades were also more likely to experience more general communication from the school. Personal communication from the school had a negative predicting value for overall grades. This suggests that higher scores on personal communication home predict lower overall grades.

Summary

This chapter presented results for the data analyses. Data were analyzed and determined to meet assumptions of data normality. Frequencies and descriptive data were reported for background characteristics of the participants of the study. A total of 32 of the 78 correlations were statistically significant using the Bonferonni adjustment, with significant relationships described. Six independent *t*-test results revealed three with statistically significant differences between rural and non-rural students. Six independent *t*-test results revealed two with statistically significant differences between male and female students. Hierarchical regression analyses indicate that for the dependent variable of overall grades each of the independent variables, with the exception of grade level, community type and census region was a significant predictor. A discussion of the results and recommendations for practice and future research are presented in chapter 5.

CHAPTER 5

DISCUSSION, CONCLUSIONS, AND IMPLICATIONS

"The involvement of one or more adults in joint activity with the child requires public policies and practices that provide opportunity, status, resources, encouragement, stability, example, and, above all, time for parenthood, primarily by parents but also by other adults in the child's environment, both within and outside the home."

Bronfenbrenner (2005)

In this chapter, the results presented in chapter 4 are examined within the context of the bioecological framework and current parent involvement literature. The chapter begins with a summary of the current study, followed by a summary of the results, implications for policy and practice, and recommendations for future research. The chapter concludes with final thoughts on the study of parent involvement in the education of students.

Summary of the Study

Chapter 1 described the importance of the study in the literature and provided each of the research questions guided by the theoretical framework. This study adds to the existing literature because it identified the variables that influence overall grades through high school parent involvement practices. By understanding what parent involvement and school variables impact overall grades, resources can be better directed toward promoting those activities. Information and discussion was provided on Bronfenbrenner's (2005) bioecological model of human development, which served as the theoretical framework for the investigation. The bioecological framework was employed to examine the macrosystem, microsystem, and exosystem as spheres of development on students and overall grades.

Chapter 2 provided a historical perspective of the literature describing parent involvement practices in the school and at home along with school communication to parents. Bronfenbrenner's (2005) bioecological theory was explained with information provided on the macrosystem, microsystem, and exosystem as they relate to parent involvement and school communication.

Chapter 3 described the methodology used in the study. A review of philosophical assumptions, research design and research questions, participants, along with data collection methods and survey instruments were presented. Independent and dependent variables were described along with factor analysis results for created construct variables. The chapter concluded with a discussion of the plan for conducting correlational, independent samples *t*-tests, and hierarchical statistical analyses.

Chapter 4 provided the results for the analyses conducted. A review of data screening and assumptions of normality with frequencies and correlations were described. The chapter concluded with descriptive and inferential statistics performed to answer each of the four research questions.

In the following sections of this chapter (chapter 5) a discussion of the results is presented for each of the independent and dependent variables. The theoretical framework utilized in this study and current literature provides further inspiration for practical implications and recommendations for future research in the macrosystem, microsystem and exosystem.

Summary of the Results

Results of the multiple regression analysis indicate that the macrosystem variables for demographics, the microsystem variables for parent involvement, and the exosystem variables of school communication home to parents were all statistically significant predictors of overall

grades. Attending a meeting at school, parent involvement at home regarding - homework rules and personal school communication to parents each reveal a negative relationship to overall grades. Independent samples *t*-tests of the macrosystem variables for rural/non-rural and gender of student provided positive correlations between active involvement at school for rural students as well as for female students. Education expectations for parent involvement at home positively correlated to non-rural students while personal school communication was statistically correlated to non-rural and male students. This study adds to the knowledge base for parent involvement practices specifically related to high school students.

Discussion of the Results

The vast majority of research about parent involvement focuses on elementary level students. While parent involvement research at the elementary level has provided positive results for student achievement, considerably less research is available for parent involvement practices at the secondary level. What is accepted by the research community is the fact that as children progress through school, parent involvement decreases (Catsambis, 2005; Eccles & Harold, 1993; Zill & Nord, 1994). A limited scope of research has suggested that some parent involvement practices do indeed influence academic attainment in secondary programing. Defining parent involvement practices that influence academic attainment will allow policy makers, educators, and parents the information needed to better influence academic attainment for youth in high schools across the country.

Many educators believe increased parent involvement is the answer to lackluster performance of students in high school. Parental involvement in high school is seen to be just as important as involvement in the elementary grade levels, but often is less visible (Ferguson & Rodriguez, 2005). As the call from national and state levels of government raise accountability

for school systems, educators must look for variables that can impact student achievement. Parent involvement is one such area where most secondary schools struggle to provide the information and resources for parents to get involved in the educational process of their child. Research by Henderson and Mapp (2002) agrees and provides topics that high schools should promote in order to engage parents in the educational process.

As students enter adolescence they display characteristics of autonomy and many parents are often excluded from information about their child's school endeavors. Parents often feel at a loss for strategies to stay connected and provide support for their child. More complex content and the often multifaceted bureaucratic nature of secondary buildings leave parents wondering how they could stay involved like they were at the elementary level. Often this lack of clear direction for parents leaves educators with perceptions of parents that are uninvolved, but this may be inaccurate. Educators do not always understand the barriers to parent involvement or the fact that many parents' involvement at the secondary level transforms to more home support practices. School systems and educators are also unaware how their communication home to parents influences behaviors of parent involvement practices.

The goal of this study was to determine the predictors of parent involvement practices at the high school level that influence academic attainment. The results show of the 12 independent macrosystem, microsystem, and exosystem variables, each of the variables of gender, ethnicity, household income, active parent involvement at school, parent involvement at home regarding - education expectations, general communication from school to home, and personal communication from school to home were significant predictors for overall grades. In the sections below, each of these independent variables is examined in detail.

Macrosystems

Six macrosystem variables (grade level, gender, ethnicity, community type, census region, and household income) were examined in this study. While gender, ethnicity, and household income were all statistically significant predictors of overall grades, they each held a very week relationship with overall grades. The macrosystem variables accounted for 9.5% of the variance in overall grades. Grade level, community type, and census region were not significant predictors of overall grades. Each macrosystem is reviewed in the following subsections.

Grade Level. Grade level of the student revealed no predicting value for overall grades in the full regression model, but did reveal a significant negative Pearson correlation with parent involvement at home with regard to homework rules. This suggests that students' in lower grade levels (ex. 9^{th} and 10^{th} grade) have more involvement from their parents checking on their homework. These data seems to align to research claiming secondary students seek independence as they get older and parents work to provide less direct supervision of learning as they get older. It would not be uncommon for parents to monitor homework more carefully when their child is a freshman or sophomore verses when the child becomes an upper classman.

Research performed by Eccles and Roeser (2011) on early adolescents suggests that as teenagers strive for independence and autonomy they still benefit from the guidance and support of parents and other adults. Hill and Tyson (2009) in their meta-analysis discovered that middle school is often the time when parents become less involved due to the many factors of the changing educational system.

Gender. The macrosystem of gender of student was a statistically significant predictor of overall grades, indicating that girls are more likely to display higher overall grades. The

difference between males and females as it relates to parent involvement is intriguing. While female students experience more active parent involvement in school than males, they also receive less personal communication from the school. This may be due to increased discipline issues experienced by males that results in personal school communication home to resolve the conflict. These findings confirm those of Sui-Chu and Willms (1996) who concluded that eighth grade students experienced higher levels of school communication and lower grades because of problematic behavior and performance.

Active parent involvement, which resulted in higher achievement levels for females, is possibly a result of the perceptions parents have about how much their child wants them to be involved. Perhaps females are more open to having parents attend school functions or be present in their school building. Maybe males shy away from interactions where their school or teachers are present with their parents.

Ethnicity. The macrosystem of ethnicity was a statistically significant predictor of overall grades, indicating that parents of white students are more likely to display higher overall grades**.** Ethnicity of the student also showed a small positive correlation to active school involvement at school and parent involvement at home regarding - educational expectations. While this correlation exists, the nature of the relationship may be questioned just as Fine (1993) raises concerns about parent involvement expectations and policy for different ethnic groups. Fine (1993) claims that many schools and research methods use a "one-size-fits-all" approach that reinforces the white, upper and middle class value system and definition of parent involvement. It is possible that there is a cultural bias in the behaviors that are being surveyed. It is also possible that racial and/or cultural discrimination comes into play regarding non-white students' grades in school.

Community Type. The macrosystem of community type was not a predictor of overall grades. This variable asked participants for their zip code in order to designate their place of residence as rural or non-rural in population. These findings suggest that students in rural and non-rural communities achieve overall grades that are not statistically different from one another. These findings support the research of Keith, Keith, Quirk, Cohen-Rosenthal, and Franzese (1996) who found rural school attendance does not affect parental involvement levels or achievement.

Census Region. Census region, or what part of the country the student lived in was not a significant predictor of overall grades. Not only was census region not a significant predictor of overall grades, but it also displayed no correlations to any of the other variables. This is good news for parent involvement and academic attainment due to the fact that this variable is not able to be changed easily for improvement. Students and families who live in one part of the country will likely not move to another location for improved parent involvement or overall grades.

Household income. The macrosystem of household income was a statistically significant predictor of overall grades, indicating households with higher income have students who are more likely to display higher overall grades. Fan (2001) and Fan and Chen (2001) found positive correlations to income levels of families, parent involvement, and academic achievement. A possible explanation for these findings is that families with higher incomes have fewer obstacles to overcome in order to become involved at school and at home.

Microsystems

Two microsystems of parent involvement at school and parent involvement at home were hypothesized to predict overall grades. All construct variables for school and home parent involvement were statistically significant predictors of overall grades. The microsystems of

parent involvement at school and parent involvement at home explained 14% of the variance for overall grades. Each microsystem is reviewed in the following subsections.

Parent involvement at school. Results of this study indicated that parent involvement at school, both those aligned with active actions of parents and those aligned with attending a meeting, were statistically significant predictors of overall grades. Based on a review of the literature, eight items were selected from the 2007- NCES Parent and Family Involvement in Education Survey data set that reflected parent involvement at school. Those items loaded on two constructs – active parent involvement at school and attending a meeting at school. Each of these constructs and their relationship with the dependent variable of overall grades are described in the following sections. For a detailed review of the factor analysis results, please refer to chapter 3.

Active parent involvement at school. Active parent involvement at school was a predictor of overall grades. Because this construct was a statistically significant predictor of overall grades, a review of the items that loaded into the construct is provided. The items included in the active parent involvement at school construct asked whether parents had performed any of the following actions during the current school year:

- Volunteered at school
- Participated in school fundraising
- Served on a school committee
- Attended a class event

As parents scored higher on the active parent involvement at school variable their student scored higher on the overall grades dependent variable.

Attending a meeting at school. Attending a meeting at school was a predictor of overall grades, but revealed a very weak negative relationship. Because this construct was a statistically significant predictor of overall grades, a review of the items that loaded into the construct is provided. The items included in the attending a meeting at school construct asked whether parents had performed any of the following actions during the current school year:

- Attended parent/teacher conferences
- Attended a guidance counselor meeting
- Attended a parent/teacher organization meeting
- Attended a general school meeting

As parents scored higher in the attending a meeting variable overall grades decreased. It is possible that this category includes dissimilar items, as the first two of these activities at the high school level may be related to student's negative behavior in school and so could become linked to school communication to the parent ("please make an appointment with the guidance counselor") instead of passive attendance at a large group meeting, as the second two items may indicate.

Parent involvement at home. Results of this study indicated that parent involvement at home, both those aligned with homework rules and education expectations, were statistically significant predictors of overall grades. Based on a review of the literature, seven items were selected from the 2007- NCES Parent and Family Involvement in Education Survey data set that reflected parent involvement at home. Those items loaded on two constructs – homework rules and education expectations. Each of these constructs and their relationship with the dependent variable of overall grades are described in the following sections. For a detailed review of the factor analysis results, please refer to chapter 3.

Parent involvement at home regarding - homework rules. Parent involvement through having homework rules in the home had a negative relationship with overall grades. Because this construct was a statistically significant predictor of overall grades, a review of the items that loaded into the construct is provided. The items included in the parent involvement at home regarding - homework rules construct asked whether parents had performed any of the following actions during the current school year:

- Checked to see that homework is done
- Set family rules about doing homework
- Helped the child with homework
- Designated a place in the home for homework

This finding is consistent with other research studies where homework rules in the home influenced academic attainment negatively. Milne, Meyers, Rosenthal and Ginsburg (1986) provided research that suggested that the strict rules governing homework may be negatively impacting academic achievement for some students. Hill and Tyson (2009) in their meta-analysis of 50 parent involvement studies concluded the same negative impact on achievement when homework rules were implemented with parent involvement.

This phenomenon may be related to students' perceptions of these parent practices and their need for autonomy. As adolescents mature they are striving for independence and the presence of strict homework rules creates negative feelings about schoolwork. Another hypothesis may include previous academic difficulties in the past which have warranted the implementation of homework rules on students. It is quite possible that some of the parents surveyed have experienced problems with their child academically and resorted to homework rules for the student in the hope of helping them achieve at higher levels. This outcome would

suggest that overall grades may not have been the result of homework rules, but that low overall grades were already present before the homework rules were even applied.

Parent involvement at home regarding - education expectations. Parent involvement that conveys to students expectations for attainment as well as discussions about post-secondary planning showed a positive relationship to overall grades. Because this construct was a statistically significant predictor of overall grades, a review of the items that loaded into the construct is provided. The items included in the parent involvement at home regarding - education expectations construct asked whether parents had performed any of the following actions during the current school year:

- Planned to pay for post-secondary education after high school
- Communicating expectations for post-secondary education beyond high school
- Started a savings account for post-secondary education beyond high school

Parent involvement in the home regarding -education expectations has yielded positive impacts on academic achievement for high school students in a limited number of meta-analytic studies (Catsambis, 2001, Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2012; Spera, 2006). In each of these studies the biggest predictor of academic achievement on high school students were parents who were involved in the education of their child and how they were doing academically, but also provided opportunities for interactions and discussion about the child's learning and how this applied to their life. These actions included relating learning to their lives, setting expectations for attainment, and planning for post-secondary educational opportunities. While these characteristics are often less subtle than imposing rules for homework they have provided a greater impact on academic achievement when looking through the lens of parent involvement (Jeynes, 2012).

Exosystems

Two exosystem variables (general school communication home and personal school communication home) were examined in this study. Both variables for the exosystem construct school communication home were statistically significant predictors of overall grades, explaining a moderate 17.9% of the variance for overall grades.

School communication home. Results of this study indicated that school communication home, both those aligned with general communication and personal communication, were statistically significant predictors of overall grades. Based on a review of the literature, seven items were selected from the 2007- NCES Parent and Family Involvement in Education Survey data set that reflected school communication home. Those items loaded on two constructs – general communication home and personal communication home. Each of these constructs and their relationship with the dependent variable of overall grades are described in the following sections. For a detailed review of the factor analysis results, please refer to chapter 3.

General school communication home. General school communication home was a predictor of higher overall grades. Because this construct was a statistically significant predictor of overall grades, a review of the items that loaded into the construct is provided. The items included in the general school communication home construct asked whether parents had received any of the following types of communication from the school during the current school year:

- Information on expected role of parents
- Information to help parents help their child with homework
- Information telling parents why child is in a certain class

- Information informing parents how to plan for college
- Information informing parents how child is doing

General school communication home represented the largest standardized beta for all microsystem or exosystem variables. This suggests that the exosystem sphere of influence is an important variable for overall grades. One hypothesis is that as parents feel better informed of what is going on at school the more they also feel able to support their child. When communication between the school and home increases Epstein (1986) claimed in her research that parent involvement also increased.

Personal school communication home. Personal communication home indicated a negative relationship to overall grades. Because this construct was a statistically significant predictor of overall grades, a review of the items that loaded into the construct is provided. The items included in the personal school communication home construct asked whether had received any of the following types of communication from the school during the current school year:

- A personal phone call from the school or teacher
- A personal note sent to the family from the school or teacher

The hypothesis that personal communication from the school to home would generate increased levels of parent involvement and academic achievement was not proven. One possible explanation to consider would be that personal communication that was the result of discipline or academic problems for the child that required communication from the school to remedy the situation. It would not be uncommon for the school or teacher who experiences problems with a particular student to initiate personal communication with parents to remedy the situation.

Conclusion

This study provided information that would help address the lack of research available for high school parent involvement practices that impact overall grades. Bronfenbrenner's (2005) bioecological model of human development was used to guide the identification of variables that predict overall grades. This approach was applied directly to parent involvement of high school students in the macrosystem, microsystem, and exosystem. In review, the microsystem variables of active parent involvement at school and parent involvement at home through education expectations were found to be statistically significant predictors of overall grades. The microsystem variables of attending a meeting at school and parent involvement at home through homework rules provided statistically significant results, but showed a negative correlation. The microsystems variables of general school communication home and personal school communication home were found to be statistically significant predictors of overall grades, with the exception of personal school communication providing a negative correlation. Macrosystem variables of gender, ethnicity, and household income were found to be statistically significant predictors of overall grades as well. Although the macrosystem variables did prove significant, it is encouraging to find in the results that the microsystem and exosystem variables produced a higher overall shared variance when all variables were examined together. This would provide policy makers, educators, and parents with areas (microsystem and exosystem) that are much easier to influence than macrosystem variables (gender, ethnicity, and household income).

Implications for Policy and Practice

Understanding the factors related to parent involvement at the high school level is essential for addressing the academic achievement of students as they prepare to be contributing

members of society. The variables most likely to be influenced by policy makers, schools, and parents in this study were the microsystem and exosystem, which were significant predictors of overall grades for high school students.

Implications for parents

Parents are an important part of the educational process at all levels of schooling. The research base would suggest that involvement at the elementary grade level is often higher and at times easier for most parents, in part because it is clearer to them what they should do. What is important may be the education of parents at the high school level about how they can provide support and learning opportunities for their child. This study provides evidence to suggest that active parent involvement in the school and parent involvement at home with education expectations has the ability to improve academic achievement. This outcome is consistent with findings from other studies, although limited in numbers for high school, that parents who are more involved in the school and provide supervisory roles for home involvement experience improved learning outcomes.

While it is often difficult for some parents to be as involved as they would like in their child's education, the evidence presented in this study would suggest that finding strategies for involvement increases the likelihood of academic success for the student. This study presented evidence to incline parents to become actively involved at school and provide involvement at home through education expectations. This research, along with the literature base would advise parents to provide home involvement that included conversations about learning, goals, and post-secondary planning (Catsambis, 2001, Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2012; Spera, 2006). The role parents play at home to support academic achievement is often more successful when it represents coaching versus an authoritative dictatorship.

A suggested "to do" list for parents based on this study, is:

- Actively participate in school events (e.g., volunteer at school, participate in a school fundraiser, serve on a school committee, attend a class event).
- Support your child's ability to attend college or other post-secondary educational opportunities (communicate your post-secondary expectations to your child, start a savings account, or consider other ways to finance your child's post-secondary schooling).
- Support your child to manage his or her own homework (by high school, your child should have grown out of the need to have family rules around homework, to get help from parents with homework, or to be relegated to a designated place to complete his or her homework).

Implications for schools

Understanding parent involvement and the changing relationships and spheres of influence are a major undertaking for schools as they struggle to provide the best educational opportunities for students during high school. Schools must be active participants in the engagement of parents in the educational process and understand researched based best practices at appropriate grade levels for involving parents. Pre-service teachers need training and experience incorporating strategies that maximize invitations for involvement from parents and understand that building positive relationships with parents will help facilitate cooperation. Although the term involvement has been used in this study throughout, Ferlazzo (2011) makes the claim for distinct difference between involvement and engagement. The latter requires schools to engage parents in the work of educating the child through listening to parents about their wants and needs. Often times schools practice involvement strategies where information is

communicated to the family compared to the practices of engagement that require communicating with the family.

Research needs to further examine the preconceived notions many schools and teachers have about parents whose involvement in the education of their child may not always be visible. Many of these parents are providing support at home in multiple ways while not always being able to provide parent involvement at school due to work schedules, family obligations, or various other barriers. Catsambis (2001) provides insight in her research to suggest that often parents are not less involved, but shift their involvement to practices that are not always apparent to schools and teachers. It is possible that these preconceived thoughts by teachers may inhibit practices to fully work with parents towards collaboration.

This study outlined parent involvement factors as well as school communication strategies that may impact academic achievement. The parent involvement and school communication variables used in this study serve as a springboard for further examination of what might help engage students and parents towards the acquisition of skills in the classroom. A "to do" list for schools based on the findings of this study is to support parents to continue to be involved with their student's education as he or she passes through middle school to high school and on to post-secondary education by providing information on:

- Opportunities for active involvement in the school (events, fundraisers, committees).
- How not to help their child with homework, but instead to support their child's self-management of homework.
- How to plan for college or other post-secondary educational opportunities.
- Changing expectations of the role of parents.
- Reasons their child is in a certain class.

- How their child is doing in school.

Recommendations for Future Research

This study contributes to the existing literature on parent involvement in high school by using the Bronfenbrenner (2005) bioecological model of human development to examine the 2007 NCES- Parent and Family Involvement in Education Survey for factors that influence overall grades.

Future research should consider further examination of parent involvement at the high school level by investigating relationships of communication from the school and teachers and how this impacts parents' choices to become involved. A limited scope of research is available on this topic and reveals an area that is becoming a focal point for educational institutions. Research conducted by Hoover-Dempsey and Sandler (1995) provides insight into motivational levels of parents to become involved in the educational process as a result of communication from the school. Communication between home and school should also be researched for the over protective parent who expects instant communication (Lum, 2006) at a time when cell phones, laptops, texting, and email provide easy access to teachers (Pricer, 2008). This research may provide information for schools as they try to increase parent involvement and at the same time not give parents mixed messages about under or over involvement for their child. This perspective on parent involvement should consider the views of parents and educators working collaboratively towards achievement, not just the perspective of schools and teachers.

Research to understand the psychological factors that influence parents to become involved or sustain involvement is needed in order to increase parent involvement incidence and effectiveness (Grolnick et al., 1997; Hoover-Dempsey & Sandler, 1995, 1997).

This exosystem sphere of influence according to Bronfenbrenner (2005) may account for major influences in academic achievement and parent involvement factors. As teachers learn improved methods for informing parents about the school, course, and individual progress of the student it may increase positive levels of parent involvement which in turn supports students for higher academic achievement.

Additional research should be conducted in the area of parent involvement at school and the differences that exist within this variable. School involvement should be separated in the research to reflect those actions that represent parents who perform active roles versus those actions that represent attendance at a meeting with no participation. Involvement in school activities may need to be further broken down into categories reflecting who the involvement was initiated by (school or parent). Most parent involvement research lumps all activities performed at the school together, but this research study revealed a distinct difference between active parent involvement, characterized by having input in decisions or performing a specific task, versus attending a meeting at school, characterized by just showing up for a meeting or attending a school activity. There is little research to discern parent involvement activities at school as a whole, and less at the high school level. This research may provide needed guidance for schools and parents as they seek to increase academic achievement.

While there has been considerable research in the area of parental involvement and what types of involvement increase academic outcomes, further research is needed to investigate microsystems at various levels simultaneously (Benner, Graham, & Mistry, 2008). This is needed in order to find correlational values that exist in different settings that the child may experience.

The parent involvement at home regarding the - educational expectations variable used in this study provided additional research and confirmation that parents' educational expectations are an important contributor to students' overall grades. Additional research should continue to examine parents' role at home as they monitor, encourage, plan, and support education in high school and encourage post-secondary goals. This research is needed for policy makers and schools as they work to create programs to increase this important factor. While many parents perform this needed support at home it is often not visible or recognized by schools and is a difficult behavior to quantify, let alone monitor and evaluate. Schools should be encouraged to support additional research by providing systemic programs that foster and evaluate efforts to increase parental involvement at home through educational expectations initiated by parents.

Parent involvement in education is an important factor in the achievement of students. It is evident that some forms of parental involvement can have higher impact on academic outcomes. Additional research is needed to confirm the finding in this study that home based parental involvement can be an effective component in student achievement. Academic socialization, parents who set goals, expectations, and plan for post-secondary education, is being researched further and will provide a platform for additional findings.

Questions arise with other variables that may influence parents and students in their personal settings (Whitlock, 2006). Grolnick & Slowiaczek, (1994) reference findings that suggest the need for further research involving students' influence on parents. According to Bronfenbrenner (2005) the interconnected spheres of relationships are dyadic in nature and influence one another. This applies to parents, students, and teachers in the manners in which each party influences the behavior of the other. Specifically, how students interact with their

parents may impact the behaviors of parents to be involved at school or home in educational endeavors.

Not included in the scope of this study, but requiring further research is parental involvement practices of low achieving and at-risk high school students. This presumption is based on a lack of attention from scholarly knowledge and especially within the population of high school students. Chen & Gregory (2009) support this claim with findings that indicate high school students who are considered at-risk may benefit most from enhanced parent involvement practices. This research area seems to be gaining ground, but still lacks clear and consistent findings. Most high schools struggle to provide interventions for students considered at-risk. It is possible that parents of at-risk students are indeed providing parent involvement supports in the home, but the research base is limited and requires additional background. Additional scholarly research about parent involvement at the high school level may provide positive impacts on dropout rates and academic achievement for at-risk students.

Research is needed to further explore the types of involvement needed at each grade level in the educational process, especially at the high school level. With a plethora of research existing for elementary students, more research is needed at the high school level. Elementary parent involvement strategies and methods of evaluation may not be appropriate for adolescent students as they build independence for future endeavors. Research and policy must align to developmental levels and consider how other interactions or spheres of influence effect parent involvement. Understanding best practices for high school parent involvement is still underrepresented in the research knowledge base, with no empirical evidence to support intervention strategies that impact student performance through randomized control trials (Ferguson & Rodriguez, 2005).

Final Thoughts

Parent involvement in the education of high school students was revealed as a statistically significant predictor of students' overall grades. This study provides data for further research in parent involvement practices of high school students.

Parent involvement in a child's education has been recognized for the positive impact academically in the elementary grade levels. Only recently have we started to see the call for more research and discovery of parent involvement practices that bring academic achievement to the secondary level. As the research base becomes more extensive it will be important to discover how adolescents can be afforded the opportunities for independence, yet experience parent involvement strategies that help to raise their academic achievement.

Home based and school based parent involvement practices continue to be examined to determine what works for schools and parents in these interconnected systems of development for the student. As our society changes, our schools will need to continue to adapt and change in order to keep parents involved in the educational process. Bronfenbrenner (1979) provided an opportunity for reflection on school beliefs about parent involvement practices when he stated that:

> The school has become, over the past two decades, one of the most potent breeding grounds of alienation in American society. In my view, it is the alienation that underlies the progressive decline in achievement test scores that has been recorded over the past dozen years both from the college bound and for the general population of students at the elementary and secondary levels. (p. 848)

Even though this quote was written 30 years ago, it reminds school systems of the need to continually seek practices that are aligned with the present day. As policy makers and school

systems institute mandates and authorize monetary funds for school improvement initiatives the variable of parent involvement must be considered for educational achievement.

APPENDIX

NCES 2007 PARENT AND FAMILY INVOLVEMENT IN EDCUATION SURVEY

Is this (PERSON/CHILD) male or female?

Response: 1=Male, 2=Female

What grade or year is (CHILD) attending?

Response: 9=9th Grade, 10=10th Grade, 11=11th Grade, 12=12th Grade

Overall, across all subjects (he/she) takes at school, does (he/she) get mostly A's, mostly B's, mostly C's, mostly D's or lower, or child's school doesn't give these grades?

Response: Recoded- 4=Mostly A's, 3=Mostly B's, 2=Mostly C's, 1=Mostly D's

Since (the beginning of this school year/September), how many times have any of (child)'s teachers or (his/her) school contacted (you/any adult in your household) about any behavior problems (he/she) is having in school?

Response: Recoded- 1=Yes, 2=No

Since (the beginning of this school year/September), how many times have any of (child)'s teachers or (his/her) school contacted (you/any adult in your household) about anything (child) is doing particularly well or better in school?

Response: Recoded- 0=No, 1=Yes

Since the beginning of this school year, (have/has) (you/any adult in your household) attended a general school meeting, for example, an open house, or a back-to-school night?

Response: Recoded- 0=No, 1=Yes

Since the beginning of this school year, (have/has) (you/any adult in your household) attended a meeting of the parent-teacher organization or association?

Response: Recoded- 0=No, 1=Yes

Since the beginning of this school year, (have/has) (you/any adult in your household) gone to a regularly scheduled parent-teacher conference with (child)'s teacher?

Response: Recoded- 0=No, 1=Yes

Since the beginning of this school year, (have/has) (you/any adult in your household) attended a school or class event, such as a play, dance, sports event, or science fair because of (child)?

Response: Recoded- 0=No, 1=Yes

Since the beginning of this school year, (have/has) (you/any adult in your household) served as a volunteer in (child)'s classroom or elsewhere in the school?

Response: Recoded- 0=No, 1=Yes

Since the beginning of this school year, (have/has) (you/any adult in your household) participated in fundraising for the school?

Response: Recoded- 0=No, 1=Yes

Since the beginning of this school year, (have/has) (you/any adult in your household) served on a school committee?

Response: Recoded- 0=No, 1=Yes

Since the beginning of this school year, (have/has) (you/any adult in your household) met with a guidance counselor in person?

Response: Recoded- 0=No, 1=Yes

Since the beginning of this school year, (have/has) (you/any adult in your household) gone to meetings or participated in activities at (child)'s school?

Response: Recoded- 0=No, 1=Yes

We're also interested in times the school contacted you without your having contacted them first. During this school year, have any of (child)'s teachers or (his/her) school sent your family notes or E-mails specifically about (child)?

Response: Recoded- 0=No, 1=Yes

We're also interested in times the school contacted you without your having contacted them first. During this school year, have any of (child)'s teachers or (his/her) school provided newsletters, memos or notices addressed to all parents?

Response: Recoded- 0=No, 1=Yes

We're also interested in times the school contacted you without your having contacted them first. During this school year, have any of (child)'s teachers or (his/her) school called you on the phone?

Response: Recoded- 0=No, 1=Yes

For each statement that I read you, please tell me how well (child)'s school has been doing the following things during this school year: a. Lets you know (between report cards) how (child) is doing in school. Would you say (child)'s school does it well, just O.K., not very well, or doesn't do it at all?

Response: Recoded- 0=No, 1=Yes

For each statement that I read you, please tell me how well (child)'s school has been doing the following things during this school year: a. Provides information about how to help (child) with (his/her) homework. Would you say (child)'s school does it well, just O.K., not very well, or doesn't do it at all?

Response: Recoded- 0=No, 1=Yes

For each statement that I read you, please tell me how well (child)'s school has been doing the following things during this school year: c. Provides information about why (child) is placed in particular groups or classes. Would you say (child)'s school does it well, just O.K., not very well, or doesn't do it at all?

Response: Recoded- 0=No, 1=Yes

For each statement that I read you, please tell me how well (child)'s school has been doing the following things during this school year: d. Provides information on how to help (child) plan for college or vocational school. Would you say (child)'s school does it well, just O.K., not very well, or doesn't do it at all?

Response: Recoded- 0=No, 1=Yes

For each statement that I read you, please tell me how well (child)'s school has been doing the following things during this school year: e. Provides information on your expected role at (child)'s school. Would you say (child)'s school does it well, just O.K., not very well, or doesn't do it at all?

Response: Recoded- 0=No, 1=Yes

Is there a place in your home that is set aside for (him/her) to do homework?

Response: Recoded- 0=No, 1=Yes

Are there family rules about doing homework?

Response: Recoded- 0=No, 1=Yes

(Do/Does) (you/any adult in your household) check to see that (his/her) homework is done?

Response: Recoded- 0=No, 1=Yes

During this school year, about how many times in an average week do you or does anyone in your household help (him/her) with (his/her) homework?

Response: Recoded- 0=No, 1=Yes

What was the total income of all persons in your household over the past year, including salaries or other earnings, interest, retirement, and so on for all household members? Was it.

Response: $5,000 or less=1
$5,001 - 10k=2
$10,001-15k=3
$15,001-20k=4
$20,001-25k=5
$25,001-30k=6
$30,001-35k=7
$35,001-40k=8
$40,001-45k=9
$45,001-50k=10
$50,001-60k=11
$60,001-75k=12
$75,001-100k=13
OVER 100k=14

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